

T.C.  
Anadolu Üniversitesi  
İnşaat Mühendisliği Anabilim Dah  
Lisansüstü Tezi

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114

**ÇOK AÇIKLIKLI ÇERÇEVE SİSTEMLİ VE  
KOLON ÇÖKMELERİNİN ETKİSİ ALTINDAKİ  
BETONARME YAPILARIN ANALİZİ**

Yöneten : Doç. Gündüz Özışık

Hazırlayan  
Cüneyt SELMANOĞULLARI

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**MERKEZ KÜTÜPHANEŞİ**

## Ö N S Ö Z

Günümüz konut yapılarında en çok kullanılan malzeme betonarmedir. Bu çalışmada betonarme bir kolonun çeşitli nedenlerle kısalması sonucunda oluşacak üç momentlerinin basit bir tablo yardımı ile bulunmasını amaçlamaktadır.

İlk bölümde böyle bir çalışmanın neden gerektiği anlatılmıştır.

İkinci bölümde çözüm metodu ve metodun teorisinin bilgisayara uyarlanması konusunda bilgi verilmiştir.

Üçüncü bölümde tablolar sunulmuştur. Bölüm başında tabloların kullanımı ile ilgili bilgiler verilmiştir.

Sonuç bölümünde çalışmanın sonuçları ve amaca ulaşıp ulaşılmadığı hakkında bilgi verilmiştir. Ek olarak da genel hal için bir bilgisayar programı ilave edilmiştir.

## İ Ç İ N D E K İ L E R

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GİRİŞ:

TÜRKİYE ve bölgemizde hasarlar sözkonusu idi, olaylar arttıkça araştırmalar da gelişti, daha bilimsel bir hâl aldı. Sadece hasar görülen bölgenin etüdü ile yetenilmeyip esas etkenin veya etki kaynağının yeri de araştırılmaya başlandı. Herhangi bir hasar sadece o bölgedeki imâlat (kalite) veya konstrüksiyon hatalarından olabileceği gibi limit durumda çalışan bir kesitin doyaylı zorlanmasıyla olabilme ihtimaline de sahiptir.

Bu hatalar şunlardır;

1. LOKAL HATA:

1.1. Kalite farklılıklarını:

İmâlat sırasında istenilen kaliteye erişilmiş olsa bile bir veya birkaç yerde bu kaliteye istenildiği halde erişilememiş olabilir. Bunun sonucunda elastiste modülü değişir ve sisteme bir kalite farklılığı meydana gelir.

E.Pauw'a göre E elastisite modülü ile küp basınç dayanımı arasında şu bağıntı vardır.

$$E = C \cdot \sqrt{\beta_w}$$

Burada C katsayısı 16.000-25.000 arasında değişmektedir. Ortalaması 20.000 alınırsa;

<u><math>\beta_w</math> (kg/cm<sup>2</sup>)</u>	<u>E(kg/cm<sup>2</sup>)</u>
80	178885
120	219085
160	252982
225	300000
300	346410

$$\epsilon = \frac{\Delta L}{L}$$

$$\sigma = \frac{\epsilon}{E}$$

$$\epsilon = \frac{\sigma}{E}$$

$\sigma = 50 \text{ kg/cm}^2$  için ( $L=300 \text{ cm}'\text{lik bir kolonda});$

$P_w (\text{kg/cm}^2)$	$\epsilon (\text{mm})$
80	0,84 - 0,16
120	0,68 - 0,09
160	0,59 - 0,09
225	0,50 - 0,07
300	0,43

Tablodan da görüleceği gibi kalite düştükçe çökme olasılığı artıyor. Biz farklı çökmeyi, çökme olarak kabul ediyoruz. Kat seviyesindeki eşit çökme sistemi zorlamaz. Kat seviyesindeki eşit çökme sonucu kolon k'larındaki farklılık ihmâl edilecek mertebede olduğundan sistemi zorlamadığını kabul ediyoruz. Burada incelenen çökme tarifi, çökmenin farklılığı ile oluşan çökmedir.

Kalite farklılığının kalite bozukluğu gösterecek kadar büyük olması halinde herhangi bir yerdeki hasarın sistem üzerindeki etkisi incelenip sistemi harabiyete götürüp götürmeyeceği de sözkonusu olabilir.

#### 1.2. Konstrüksiyon hatası:

İmâlat sırasında yerine konulan donatının uygun olmaması veya kesitlerdeki farklılıkların sonucunda oluşan hatadır. İmâlat hatası bahsinde söylenenlerin tamamı bu tip hata içinde geçerlidir.

## 2.SİSTEMİ İÇEREN HATA:

Lokal hata bölgesel bir hatadır.Bir de başka bir elemanın diğer bir elemana etkisi sonucu oluşan hatalar vardır.Bunlar sistemi içeren hatalar olarak isimlendirilirler.

2.1.Sistemin düzenlenmesinde hata olabilir.Bunun sonucunda statik zorlanma herhangi bir yerde kendisini belli eder.

2.2.Sistem düzenli bir sistemdir.Görünen kusuru görünmeyen bir bölgede etki meydana getirmiştir.Limit durumda çalışan bir kolon düşünelim:Dizaynı ve imâlatında hata olmasın.Uzağindaki bir kolonun kısalması sonucu kolon limit durumunu aşmış ve bu etki hasara neden olmuştur.Bunun yanında çöken kolon limit durma ulaşmış ve hasar sınırlı kalmış olabilir.Bu etki görünen etkinin görünmeyen bölgedeki etkisi olarak tanımlanır.

3.Bu gibi etkenlerin mertebesi hakkında bir fikir verebilmek için bir çalışmaya gerek duyulmuştur.Bu çalışmanın çerçevesi,birkaç açıklığı ve çok katı içeren çerçeveler içinde meydana gelebilecek yukarıdaki sakinlerin mertebesi hakkında fikir vermektedir.Burada şunuda belirtmekte bir fayda vardır.Böyle bir inceleme düşey ve yatay yükler için Takabeya<sup>(x)</sup> tarafından yapılmıştır.Bu çalışma ona paralel bir çalışma olup bu konudaki boşluğu doldurmak amacıyladır.

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(x) TAKABEYA, F. MEHRSTÖCKIGE RAHMEN, Berlin 1967

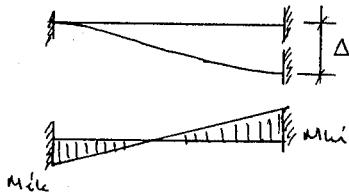
### TEORİNİN BİLGİSAYARA UYARLANMASI:

İzahının basit olması ve bazı bileşenlerinin terk-edilebilmesi açısından, açı metodu tercih edilmiştir. (yatay deplasman, ısı etkisi, vb.)

Burada klasik açı metodu denklem takımları kullanılmıştır. Denklem takımlarının çıkartılması herhangi bir yapı statigi kitabından da takip edilebilicegi için, denklem takımlarının son haliyle yazılması uygun görülmüştür.

$$\frac{4E\gamma}{L} \varphi_{ik} + \frac{2E\gamma}{L} \varphi_{ki} + \bar{M} = 0$$

denklemi her düğüm için bir defa yazılmıştır. İki ucu ankastre bir ik çubugunun çökmesinden doğan ankastrelilik momentinin,



$$M_{ik} = M_{ki} = \frac{6 \cdot E \cdot \gamma}{L^2} \cdot \Delta$$

olduğunu biliyoruz.

Kullanılan bilgisayar programının bir özelliği açı metodu denklem takımları otomatik olarak kurulmakta, ankastre momentler hesaplanarak yük matrisine yerleştirilmektedir. Denklem takımlarının simetrik ve bant olması özelliğinden de yararlanılarak Cholesky Metodu ile çözülmektedir.

Sonuçta da üç momentleri hesaplanarak sistemli bir şekilde yazdırılmaktadır. Tabloların oluşturulmasında yararlanılan ana programın bir listesi ek'te sunulmuştur.

### TABLOLARIN KULLANIMI :

Tablolar hazırlanırken pratikteki kullanımını gözönüne alınarak hazırlanmışlardır.Katsayılar 1 mm'lik bir çökme için tesbit edilmişlerdir. mm'nin katları olan bir çökme mertebesi içinde kullanılabılırler.Tabloların en büyük özelliği, tek bir sabit çarpan ile iş yapmalıdır.Bu sabit çarpan tm.cinsinden ankastrelik momentinin 1000'e oranıdır.

$$\bar{M} = \frac{6.E.J.\Delta}{L^2}$$

E:Elastisite modülü ( $t/m^2$ )

J:Atalet momenti( $m^4$ )

L:Açıklık (m)

formülü ile ankastrelik momenti hesaplanır,

$$\bar{M}^* = \frac{M}{1000}$$

sabit çarpanı bulunur ve uçlardaki değerler ile çarpılırsa çıkan sonuçlar tm.cinsinden uç momentleridir.

Tablolar her ne kadar simetriksistemler için hazırlanmışlarsa da açıklıkların çok farklı olmadığı durumlarda emniyetli yönde kalarak gerçek değerlere yakın sonuçlar vermektedirler.Yalnız dikkat edilmesi gereken bir nokta,ankastrelik momentlerinin büyüğü ile sabit çarpan hesaplanmalıdır.

## SİSTEM GEOMETRİK ÖZELLİKLERİ

A horizontal beam is shown with two downward-pointing arrows representing loads. The first load is labeled  $1.38k$  and is located at a distance of  $0.22L$  from the left support. The second load is also labeled  $1.38k$  and is located at a distance of  $0.22L$  from the first load, which is equivalent to  $0.44L$  from the left support. The total length of the beam is indicated as  $L$ .

1 .inci kat 1 .inci kolonun cokmesi hali

$*(-113)$	$-(-310)*(+258)$	$-(+221)*$
[ +113]	[ -51]	[ -221]
[ +56]	[ +261]	[ -111]
---	---	---

1 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{c}
 *(+135)-----*(+568)*(-568)-----*(-135)* \\
 [-135] \qquad [ +0] \qquad [ +135] \\
 | \qquad | \qquad | \\
 [ -68] \qquad [ +0] \qquad [ +68] \\
 | \qquad | \qquad | \\
 --- \qquad --- \qquad ---
 \end{array}$$

## SİSTEM GEOMETRİK ÖZELLİKLERİ

1 .inci kat 1 .inci kolonun cokmesi hali

*(-151)-----{-332}*{(+258)-----{ +29)*		
[ +151]	[ +75]	[ -29]
<hr/>		
[ +142]	[ +74]	[ -26]
<hr/>		
*{-282}-----{-409}*{(+258)-----{ +52)*		
[ +148]	[ +77]	[ -26]
<hr/>		
[ +70]	[ +38]	[ -13]

1 .inci kat 2 .inci kolonun çökmesi hali

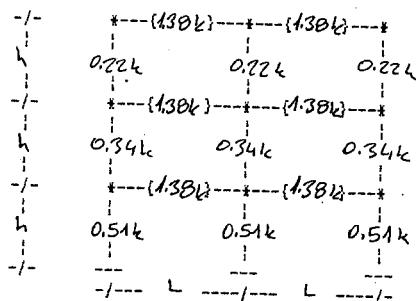
$$\begin{array}{c} *(+180)-----\{+590)*\{-590\}-----\{-180\}* \\ [-180] \quad [ -0] \quad [ +180] \\ | \\ [-168] \quad [ -01] \quad [ +168] \\ *(+334)-----\{+667)*\{-667\}-----\{-334\}* \\ [-165] \quad [ -01] \quad [ +165] \\ | \\ [-83] \quad [ -01] \quad [ +83] \\ | \\ --- \quad --- \quad --- \end{array}$$

2 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{c} *(-110)-----\{-308)*\{+257\}-----\{ +22\}* \\ [+110] \quad [ +51] \quad [ -22] \\ | \\ [+51] \quad [ +251] \quad [ -10] \\ *(-41)-----\{ -24)*\{ +8\}-----\{ +7\}* \\ [-10] \quad [ -1] \quad [ +2] \\ | \\ [-5] \quad [ -1] \quad [ +1] \\ | \\ --- \quad --- \quad --- \end{array}$$

2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{c} *(+132)-----\{+566)*\{-566\}-----\{-132\}* \\ [-132] \quad [ -0] \quad [ +132] \\ | \\ [-60] \quad [ -0] \quad [ +60] \\ *[+48)-----\{ +24)*\{ -24\}-----\{ -48\}* \\ [+12] \quad [ +0] \quad [ -12] \\ | \\ [+6] \quad [ +0] \quad [ -6] \\ | \\ --- \quad --- \quad --- \end{array}$$



1 .inci kat 1 .inci kolonun çökmesi hali

$*(-149)$	$+(-331)$	$*(+257)$	$+(-28)$
[ +149]	[ +74]	[ -28]	
[ +136]	[ +72]	[ -25]	
$*(-326)$	$+(-438)$	$*(+255)$	$+(-58)$
[ +190]	[ +111]	[ -33]	
[ +186]	[ +109]	[ -32]	
$*(-367)$	$+(-466)$	$*(+249)$	$+(-63)$
[ +181]	[ +107]	[ -31]	
[ +90]	[ +54]	[ -15]	
---	---	---	---

1 .inci kat 2 .inci kolonun çökmesi hali

$*(+177)$	$+(-588)$	$*(-588)$	$+(-177)$
[ -177]	[ -0]	[ +177]	
[ -161]	[ +0]	[ +161]	
$*(+384)$	$+(-692)$	$*(-692)$	$+(-384)$
[ -224]	[ +0]	[ +224]	
[ -218]	[ +0]	[ +218]	
$*(+429)$	$+(-715)$	$*(-715)$	$+(-429)$
[ -211]	[ +0]	[ +211]	
[ -106]	[ +0]	[ +106]	
---	---	---	---

2 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{l}
 *{-152}-----{-333}*(+258)-----(+29)* \\
 [ +152] \quad [ +751] \quad [ -291] \\
 | \quad | \quad | \\
 [ +142] \quad [ +74] \quad [ -27] \\
 *{-278}-----{-407}*(+258)-----(+51)* \\
 [ +136] \quad [ +76] \quad [ -24] \\
 | \quad | \quad | \\
 [ +68] \quad [ +36] \quad [ -10] \\
 *{-45}-----{-29}*(-4)-----(+63)* \\
 [ -15] \quad [ -3] \quad [ +41] \\
 | \quad | \quad | \\
 [ -8] \quad [ -2] \quad [ +2] \\
 --- \quad --- \quad ---
 \end{array}$$

2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{l}
 *{+180}-----{+590}*(-590)-----{-180}* \\
 [ -180] \quad [ -8] \quad [ +180] \\
 | \quad | \quad | \\
 [ -169] \quad [ +8] \quad [ +169] \\
 *{+329}-----{+664}*(-664)-----{-329}* \\
 [ -168] \quad [ +8] \quad [ +168] \\
 | \quad | \quad | \\
 [ -70] \quad [ +8] \quad [ +70] \\
 *{+51}-----{+26}*(-26)-----(-51)* \\
 [ +19] \quad [ -8] \quad [ -19] \\
 | \quad | \quad | \\
 [ +18] \quad [ -8] \quad [ -18] \\
 --- \quad --- \quad ---
 \end{array}$$

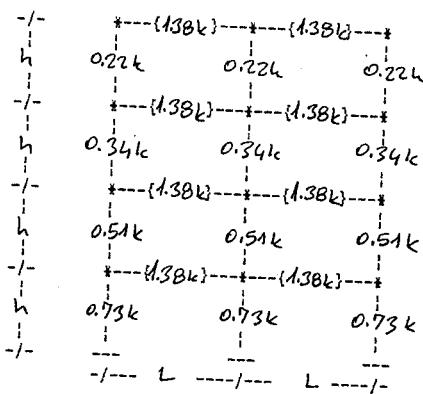
3 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{l}
 *{-110}-----{-308}*(+257)-----(+22)* \\
 [ +110] \quad [ +51] \quad [ -22] \\
 | \quad | \quad | \\
 [ +51] \quad [ +251] \quad [ -10] \\
 *{-41}-----{-24}*(+8)-----(+7)* \\
 [ -9] \quad [ -1] \quad [ +2] \\
 | \quad | \quad | \\
 [ -4] \quad [ -1] \quad [ +1] \\
 *{+3}-----{+1}*(-1)-----(-1)* \\
 [ +1] \quad [ -8] \quad [ -8] \\
 | \quad | \quad | \\
 [ +1] \quad [ -8] \quad [ -8] \\
 --- \quad --- \quad ---
 \end{array}$$

3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{c}
 *(+132)-----(+566)*(-566)-----(-132)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [-132] \quad [ -0] \quad [ +132] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [-60] \quad [ -0] \quad [ +60] \\
 *(+49)-----(+24)*(-24)-----(-49)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+12] \quad [ +0] \quad [ -12] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+5] \quad [ +0] \quad [ -5] \\
 *(-4)-----(-2)*(+2)-----(+4)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [-1] \quad [ +0] \quad [ +1] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [-1] \quad [ +0] \quad [ +1] \\
 \hline
 \end{array}$$

### SİSTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{c}
 *{-149}-----(-331)*(+257)-----(+28)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+149] \quad [ +74] \quad [ -28] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+136] \quad [ +72] \quad [ -25] \\
 *{-322}-----(-436)*(+254)-----(+57)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+186] \quad [ +109] \quad [ -32] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+176] \quad [ +106] \quad [ -29] \\
 *{-417}-----(-500)*(+242)-----(+67)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+241] \quad [ +152] \quad [ -38] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+235] \quad [ +150] \quad [ -37] \\
 *{-453}-----(-526)*(+235)-----(+70)* \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+218] \quad [ +141] \quad [ -33] \\
 | \quad \quad \quad | \quad \quad \quad | \quad \quad \quad | \\
 [+189] \quad [ +70] \quad [ -17] \\
 \hline
 \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$*(+177)-----(+589)*(-589)-----(-177)*$   
[ -177] [ -0] [ +177]  
  
[ -161] [ -0] [ +161]  
 $*(+379)-----(+690)*(-690)-----(-379)*$   
[ -218] [ +0] [ +218]  
  
[ -205] [ +0] [ +205]  
 $*(+484)-----(+742)*(-742)-----(-484)*$   
[ -279] [ +0] [ +279]  
  
[ -272] [ -0] [ +272]  
 $*(+523)-----(+762)*(-762)-----(-523)*$   
[ -251] [ -0] [ +251]  
  
[ -126] [ -0] [ +126]  
---

2 .inci kat 1 .inci kolonun çökmesi hali

$*(-149)-----(-331)*(+257)-----(+28)*$   
[ +149] [ +74] [ -28]  
  
[ +136] [ +72] [ -25]  
 $*(-327)-----(-438)*(+255)-----(+58)*$   
[ +191] [ +111] [ -33]  
  
[ +187] [ +109] [ -32]  
 $*(-362)-----(-463)*(+248)-----(+61)*$   
[ +174] [ +105] [ -29]  
  
[ +75] [ +49] [ -11]  
 $*(-51)-----(-35)*(-7)-----(+5)*$   
[ -24] [ -7] [ +6]  
  
[ -12] [ -3] [ +3]  
---

2 .inci kat 2 .inci kolonun cokmesi hali

$*(+177)-----(+588)*(-588)-----(-177)*$		
[ -177]	[ -0]	[ +177]
$*(+385)-----(+692)*(-692)-----(-385)*$		
[ -224]	[ +0]	[ +224]
$*(+423)-----(+711)*(-711)-----(-423)*$		
[ -203]	[ +0]	[ +203]
$*(+56)-----(+28)*(-28)-----(-56)*$		
[ +38]	[ +0]	[ -38]
[ +15]	[ +0]	[ -15]
---	---	---

3 .inci kat 1 .inci kolonun cokmesi hali

$*(-152)-----(-333)*(+258)-----(+29)*$		
[ +152]	[ +75]	[ -29]
$*(-278)-----(-407)*(+258)-----(+51)*$		
[ +136]	[ +76]	[ -24]
$*(+60)-----(+36)$		[ -10]
$*(-46)-----(-29)*(-3)-----(+6)*$		
[ -15]	[ -3]	[ +4]
$*(+4)-----(+2)*(-0)-----(-1)*$		
[ +2]	[ +0]	[ -1]
[ +1]	[ +0]	[ -0]
---	---	---

3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{c} *(+180)-----(+590)*(-590)-----(-180)* \\ | \quad | \quad | \\ [-180] \quad [-0] \quad [+180] \\ | \quad | \quad | \\ [-169] \quad [+0] \quad [+169] \\ | \quad | \quad | \\ *(+329)-----(+664)*(-664)-----(-329)* \\ | \quad | \quad | \\ [-168] \quad [+0] \quad [+168] \\ | \quad | \quad | \\ [-70] \quad [+0] \quad [+70] \\ | \quad | \quad | \\ *(+52)-----(+26)*(-26)-----(-52)* \\ | \quad | \quad | \\ [+18] \quad [-0] \quad [-18] \\ | \quad | \quad | \\ [+8] \quad [-0] \quad [-8] \\ | \quad | \quad | \\ *(-5)-----(-3)*(+3)-----(+5)* \\ | \quad | \quad | \\ [-3] \quad [+0] \quad [+3] \\ | \quad | \quad | \\ [-1] \quad [+0] \quad [+1] \\ | \quad | \quad | \\ --- \quad --- \quad --- \end{array}$$

4 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{c} *(-110)-----(-308)*(+257)-----(+22)* \\ | \quad | \quad | \\ [+110] \quad [+51] \quad [-22] \\ | \quad | \quad | \\ [+51] \quad [+25] \quad [-10] \\ | \quad | \quad | \\ *(-41)-----(-24)*(+0)-----(+7)* \\ | \quad | \quad | \\ [-9] \quad [-1] \quad [+2] \\ | \quad | \quad | \\ [-4] \quad [-1] \quad [+1] \\ | \quad | \quad | \\ *(+3)-----(+1)*(-1)-----(-1)* \\ | \quad | \quad | \\ [+1] \quad [-0] \quad [-0] \\ | \quad | \quad | \\ [+0] \quad [-0] \quad [-0] \\ | \quad | \quad | \\ *(-0)-----(-0)*(+0)-----(+0)* \\ | \quad | \quad | \\ [-0] \quad [+0] \quad [+0] \\ | \quad | \quad | \\ [-0] \quad [+0] \quad [+0] \\ | \quad | \quad | \\ --- \quad --- \quad --- \end{array}$$

4 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{c} *(+132)-----(+566)*(-566)-----(-132)* \\ [-132] \quad [-0] \quad [+132] \\ [-68] \quad [-0] \quad [+68] \\ *(+49)-----(+24)*(-24)-----(-49)* \\ [+12] \quad [+0] \quad [-12] \\ [+5] \quad [+0] \quad [-5] \\ *(-4)-----(-2)*(+2)-----(+4)* \\ [-1] \quad [-0] \quad [+1] \\ [-1] \quad [-0] \quad [+1] \\ *(+0)-----(+0)*(-0)-----(-0)* \\ [+0] \quad [+0] \quad [-0] \\ [+0] \quad [+0] \quad [-0] \\ \hline \end{array}$$

#### SİSTEM GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{c} -/- \quad *---(138k)---*---(138k)---* \\ h \quad 0.22k \quad 0.22k \quad 0.22k \\ -/- \quad *---(138k)---*---(138k)---* \\ h \quad 0.34k \quad 0.34k \quad 0.34k \\ -/- \quad *---(138k)---*---(138k)---* \\ h \quad 0.51k \quad 0.51k \quad 0.51k \\ -/- \quad *---(138k)---*---(138k)---* \\ h \quad 0.73k \quad 0.73k \quad 0.73k \\ -/- \quad *---(138k)---*---(138k)---* \\ h \quad k \quad k \quad k \\ -/- \quad \hline L \quad \hline L \quad \hline \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$*\{-149\}-----\{-331\}*\{+257\}-----\{ +28\}*$   
[ +149] [ +74] [ -28]  
 $\times\{-323\}-----\{-436\}*\{+254\}-----\{ +57\}*$   
[ +186] [ +109] [ -32]  
 $\times\{-412\}-----\{-497\}*\{+242\}-----\{ +66\}*$   
[ +235] [ +149] [ -37]  
 $\times\{-506\}-----\{-565\}*\{+225\}-----\{ +73\}*$   
[ +286] [ +196] [ -40]  
 $\times\{-532\}-----\{-585\}*\{+217\}-----\{ +73\}*$   
[ +251] [ +174] [ -34]  
 $\times\{-126\}-----\{-87\}-----\{ -17\}$   
---

1 .inci kat 2 .inci kolonun çökmesi hali

$*\{+177\}-----\{+589\}*\{-589\}-----\{-177\}*$   
[ -177] [ -0] [ +177]  
 $\times\{-161\}-----\{-0\}-----\{ +161\}$   
[ -161] [ -0] [ +161]  
 $\times\{+380\}-----\{+690\}*\{-690\}-----\{-380\}*$   
[ -219] [ -0] [ +219]  
 $\times\{-206\}-----\{+0\}-----\{ +206\}$   
 $\times\{+478\}-----\{+739\}*\{-739\}-----\{-478\}*$   
[ -271] [ +0] [ +271]  
 $\times\{-253\}-----\{+0\}-----\{ +253\}$   
 $\times\{+579\}-----\{+789\}*\{-789\}-----\{-579\}*$   
[ -326] [ -0] [ +326]  
 $\times\{-319\}-----\{+0\}-----\{ +319\}$   
 $\times\{+605\}-----\{+803\}*\{-803\}-----\{-605\}*$   
[ -286] [ -0] [ +286]  
 $\times\{-143\}-----\{+0\}-----\{ +143\}$   
---

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{l} *{(-149)}-----{(-331)}*{(+257)}-----{(+28)}* \\ [ +149] \quad [ +74] \quad [ -28] \\ \\ [ +136] \quad [ +72] \quad [ -25] \\ *{(-322)}-----{(-435)}*{(+254)}-----{(+57)}* \\ [ +186] \quad [ +109] \quad [ -32] \\ \\ [ +176] \quad [ +186] \quad [ -29] \\ *{(-418)}-----{(-501)}*{(+242)}-----{(+68)}* \\ [ +242] \quad [ +152] \quad [ -38] \\ \\ [ +238] \quad [ +151] \quad [ -37] \\ *{(-447)}-----{(-523)}*{(+235)}-----{(+69)}* \\ [ +209] \quad [ +137] \quad [ -31] \\ \\ [ +87] \quad [ +62] \quad [ -11] \\ *{(-54)}-----{(-39)}*{(-11)}-----{(+3)}* \\ [ -33] \quad [ -12] \quad [ +8] \\ \\ [ -16] \quad [ -6] \quad [ +4] \\ \hline \end{array}$$

2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{l} *{(+177)}-----{(+589)}*{(-589)}-----{(-177)}* \\ [ -177] \quad [ -0] \quad [ +177] \\ \\ [ -161] \quad [ -0] \quad [ +161] \\ *{(+379)}-----{(+690)}*{(-690)}-----{(-379)}* \\ [ -218] \quad [ -0] \quad [ +218] \\ \\ [ -205] \quad [ +0] \quad [ +205] \\ *{(+485)}-----{(+743)}*{(-743)}-----{(-485)}* \\ [ -280] \quad [ +0] \quad [ +280] \\ \\ [ -275] \quad [ +0] \quad [ +275] \\ *{(+515)}-----{(+758)}*{(-758)}-----{(-515)}* \\ [ -241] \quad [ +0] \quad [ +241] \\ \\ [ -98] \quad [ +0] \quad [ +98] \\ *{(+57)}-----{(+28)}*{(-28)}-----{(-57)}* \\ [ +41] \quad [ -0] \quad [ -41] \\ \\ [ +21] \quad [ -0] \quad [ -21] \\ \hline \end{array}$$

3 .inci kat 1 .inci kolonun çökmesi hali

$*(-149)-----\{-331)*(+257)-----\{ +28)*$		
[ +149]	[ +74]	[ -28]
[ +136]	[ +72]	[ -25]
$*(-327)-----\{-438)*(+255)-----\{ +58)*$		
[ +191]	[ +111]	[ -33]
[ +187]	[ +109]	[ -32]
$*(-362)-----\{-463)*(+248)-----\{ +61)*$		
[ +174]	[ +105]	[ -29]
[ +74]	[ +49]	[ -11]
$*(-52)-----\{-36)*(-7)-----\{ +57)*$		
[ -23]	[ -7]	[ +6]
[ -9]	[ -3]	[ +2]
$*(+5)-----\{ +3)*(-8)-----\{ -1)*$		
[ +4]	[ +0]	[ -1]
[ +2]	[ +0]	[ -1]
---	---	---

3 .inci kat 2 .inci kolonun çökmesi hali

$*(+177)-----\{+588)*(-588)-----\{-177)*$		
[ -177]	[ -0]	[ +177]
[ -160]	[ -0]	[ +160]
$*(+385)-----\{+692)*(-692)-----\{-385)*$		
[ -224]	[ -0]	[ +224]
[ -220]	[ +0]	[ +220]
$*(+423)-----\{+711)*(-711)-----\{-423)*$		
[ -203]	[ +0]	[ +203]
[ -86]	[ +01]	[ +86]
$*(+57)-----\{ +29)*(-29)-----\{ -57)*$		
[ +28]	[ -0]	[ -28]
[ +12]	[ -0]	[ -12]
$*(-7)-----\{-3)*(+3)-----\{ +7)*$		
[ -5]	[ +0]	[ +5]
[ -2]	[ +0]	[ +2]
---	---	---

4 .inci kat 1 .inci kolonun cokmesi hali.

$$\begin{array}{l} *{(-152)}-----{-333}*(+258)-----{+29}* \\ [ +152] \quad [ +75] \quad [ -29] \\ \\ [ +142] \quad [ +74] \quad [ -27] \\ *{(-278)}-----{-407}*(+258)-----{+51}* \\ [ +136] \quad [ +76] \quad [ -24] \\ \\ [ +60] \quad [ +36] \quad [ -10] \\ *{(-46)}-----{(-29)*(-3)}-----{+6}* \\ [ -15] \quad [ -3] \quad [ +4] \\ \\ [ -6] \quad [ -2] \quad [ +2] \\ *{(+4)}-----{(+2)*(-8)}-----{(-1)}* \\ [ +2] \quad [ +0] \quad [ -1] \\ \\ [ +1] \quad [ +0] \quad [ -0] \\ *{(-8)}-----{(-8)*(+8)}-----{(+8)}* \\ [ -8] \quad [ +0] \quad [ +0] \\ \\ [ -8] \quad [ +0] \quad [ +0] \\ \hline \end{array}$$

4 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{l} *{(+180)}-----{(+590)*(-590)}-----{(-180)}* \\ [ -180] \quad [ -0] \quad [ +180] \\ \\ [ -169] \quad [ -0] \quad [ +169] \\ *{(+329)}-----{(+664)*(-664)}-----{(-329)}* \\ [ -160] \quad [ -0] \quad [ +160] \\ \\ [ -78] \quad [ -0] \quad [ +78] \\ *{(+52)}-----{(+26)*(-26)}-----{(-52)}* \\ [ +18] \quad [ -0] \quad [ -18] \\ \\ [ +8] \quad [ +0] \quad [ -8] \\ *{(-5)}-----{(-3)*(+3)}-----{(+5)}* \\ [ -3] \quad [ +0] \quad [ +3] \\ \\ [ -1] \quad [ +0] \quad [ +1] \\ *{(+1)}-----{(+0)*(-0)}-----{(-1)}* \\ [ +0] \quad [ -0] \quad [ -0] \\ \\ [ +0] \quad [ -0] \quad [ -0] \\ \hline \end{array}$$

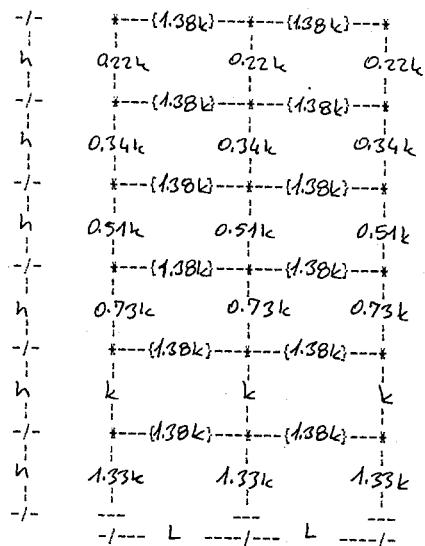
5 .inci kat 1 .inci kolonun cokmesi hali

```
*{ -110}-----{ -308}*{ +257}-----{ +22}*  
[ +110] [ +51] [ -22]  
|  
[ +51] [ +251] [ -10]  
*{ -41}-----{ -24}*{ +0}-----{ +7}*  
[ -9] [ -1] [ +2]  
|  
[ -4] [ -1] [ +1]  
*{ +3}-----{ +1}*{ -1}-----{ -1}*  
[ +1] [ -0] [ -0]  
|  
[ +0] [ -0] [ -0]  
*{ -0}-----{ -0}*{ +0}-----{ +0}*  
[ -0] [ +0] [ +0]  
|  
[ -0] [ +0] [ +0]  
*{ +0}-----{ +0}*{ -0}-----{ -0}*  
[ +0] [ -0] [ -0]  
|  
[ +0] [ -0] [ -0]  
---
```

5 .inci kat 2 .inci kolonun cokmesi hali

```
*{ +132}-----{ +566}*{ -566}-----{ -132}*  
[ -132] [ -0] [ +132]  
|  
[ -60] [ -0] [ +60]  
*{ +49}-----{ +24}*{ -24}-----{ -49}*  
[ +12] [ +0] [ -12]  
|  
[ +5] [ +0] [ -5]  
*{ -4}-----{ -2}*{ +2}-----{ +4}*  
[ -1] [ -0] [ +1]  
|  
[ -1] [ -0] [ +1]  
*{ +0}-----{ +0}*{ -0}-----{ -0}*  
[ +0] [ +0] [ -0]  
|  
[ +0] [ +0] [ -0]  
*{ -0}-----{ -0}*{ +0}-----{ +0}*  
[ -0] [ -0] [ +0]  
|  
[ -0] [ -0] [ +0]  
---
```

## SİSTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$\{ -149 \}$	$\{ -331 \} * \{ +257 \} = \{ +28 \}$	
$\{ +149 \}$	$\{ +74 \}$	$\{ -28 \}$
$\{ +136 \}$	$\{ +72 \}$	$\{ -25 \}$
	$* \{ -323 \} = \{ -436 \} * \{ +254 \} = \{ +57 \}$	
$\{ +186 \}$	$\{ +109 \}$	$\{ -32 \}$
$\{ +177 \}$	$\{ +106 \}$	$\{ -30 \}$
	$* \{ -412 \} = \{ -498 \} * \{ +242 \} = \{ +66 \}$	
$\{ +236 \}$	$\{ +150 \}$	$\{ -37 \}$
$\{ +222 \}$	$\{ +145 \}$	$\{ -33 \}$
	$* \{ -500 \} = \{ -561 \} * \{ +225 \} = \{ +72 \}$	
$\{ +278 \}$	$\{ +191 \}$	$\{ -38 \}$
$\{ +259 \}$	$\{ +184 \}$	$\{ -34 \}$
	$* \{ -585 \} = \{ -626 \} * \{ +204 \} = \{ +74 \}$	
$\{ +325 \}$	$\{ +238 \}$	$\{ -40 \}$
$\{ +321 \}$	$\{ +236 \}$	$\{ -39 \}$
	$* \{ -601 \} = \{ -640 \} * \{ +197 \} = \{ +72 \}$	
$\{ +281 \}$	$\{ +207 \}$	$\{ -34 \}$
$\{ +140 \}$	$\{ +103 \}$	$\{ -17 \}$

1 .inci kat 2 .inci kolonun çökmesi hali

	*	{+177}-----{+589}*{(-589)-----{(-177)*}
[ -177]	[ -0]	[ +177]
	*	{+380}-----{+690}*{(-690)-----{(-380)*}
[ -219]	[ +0]	[ +219]
	*	{(+479)-----{+739}*{(-739)-----{(-479)*}
[ -272]	[ -0]	[ +272]
	*	{(+571)-----{+786}*{(-786)-----{(-571)*}
[ -316]	[ +0]	[ +316]
	*	{(+658)-----{+829}*{(-829)-----{(-658)*}
[ -365]	[ -0]	[ +365]
	*	{(+674)-----{+837}*{(-837)-----{(-674)*}
[ -314]	[ -0]	[ +314]
[ -157]	[ -0]	[ +157]
---	---	---

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{ccc} *{-149} & -{-331} & +{257} \\ \hline [+149] & [+74] & [-28] \\ & & \\ [-323] & -{-436} & +{254} \\ \hline [+187] & [+109] & [-32] \\ & & \\ [-411] & -{-497} & +{242} \\ \hline [+235] & [+149] & [-37] \\ & & \\ [-507] & -{-565} & +{225} \\ \hline [+287] & [+196] & [-41] \\ & & \\ [-524] & -{-580} & +{218} \\ \hline [+240] & [+168] & [-32] \\ & & \\ [-54] & -{-41} & +{-14} \\ \hline [-43] & [-18] & [+10] \\ & & \\ [-21] & [-9] & [+5] \\ \hline \end{array}$$

2 .inci kat 2 .inci kolonun cokmesi hali

	*	{+177}-----{-589}*{(-589)}-----{(-177)*}
[ -177]	[ -0]	[ +177]
	*	{+380}-----{+690}*{(-690)}-----{(-380)*}
[ -161]	[ +0]	[ +161]
	*	{+478}-----{+739}*{(-739)}-----{(-478)*}
[ -219]	[ +0]	[ +219]
	*	{+580}-----{+790}*{(-790)}-----{(-580)*}
[ -207]	[ +0]	[ +207]
	*	{+596}-----{+798}*{(-798)}-----{(-596)*}
[ -271]	[ -0]	[ +271]
	*	{+52}-----{+26}*{(-26)}-----{(-52)*}
[ -252]	[ +0]	[ +252]
	*	{+107}-----{+54}*{(-54)}-----{(-107)*}
[ -272]	[ -0]	[ +272]
	*	{+52}-----{+26}*{(-26)}-----{(-52)*}
[ -107]	[ -0]	[ +107]
	*	{+52}-----{+26}*{(-26)}-----{(-52)*}
[ +52]	[ +0]	[ -52]
	*	{+26}-----{+26}*{(-26)}-----{(-26)*}
[ +26]	[ +0]	[ -26]
---	---	---

3 .inci kat 1 .inci kolonun cokmesi hali

$*\{-149\}-----\{-331\}*(+257)-----\{ +28\}*$		
[ +149]	[ +74]	[ -28]
[ +136]	[ +72]	[ -25]
$*\{-322\}-----\{-435\}*(+254)-----\{ +57\}*$		
[ +186]	[ +109]	[ -32]
[ +176]	[ +106]	[ -29]
$*\{-418\}-----\{-501\}*(+242)-----\{ +68\}*$		
[ +242]	[ +152]	[ -38]
[ +238]	[ +151]	[ -37]
$*\{-447\}-----\{-523\}*(+235)-----\{ +69\}*$		
[ +209]	[ +137]	[ -31]
[ +86]	[ +62]	[ -11]
$*\{ -55\}-----\{ -40\}*( -11)-----\{ +3\}*$		
[ -31]	[ -12]	[ +8]
[ -12]	[ -5]	[ +3]
$*\{ +7\}-----\{ +4\}*( +8)-----\{ -1\}*$		
[ +6]	[ +1]	[ -2]
[ +3]	[ +0]	[ -1]
---	---	---

3 .inci kat 2 .inci kolonun çökmesi hali

	*	{+177}	-----	{+589}	*{(-589)	-----	{-177}	*
[ -177]		[ -0]		[ +177]				
[ -161]		[ +0]		[ +161]				
	*	{+379}	-----	{+690}	*{(-690)	-----	{-379}	*
[ -218]		[ +0]		[ +218]				
[ -205]		[ +0]		[ +205]				
	*	{+485}	-----	{+743}	*{(-743)	-----	{-485}	*
[ -280]		[ -0]		[ +280]				
[ -275]		[ +0]		[ +275]				
	*	{+515}	-----	{+758}	*{(-758)	-----	{-515}	*
[ -240]		[ +0]		[ +240]				
[ -97]		[ +0]		[ +97]				
	*	{+58}	-----	{+29}	*{(-29)	-----	{-58}	*
[ +39]		[ -0]		[ -39]				
[ +15]		[ -0]		[ -15]				
	*	{-8}	-----	{-4}	*{(+4)	-----	{+8}	*
[ -8]		[ +0]		[ +8]				
[ -4]		[ +0]		[ +4]				
---		---		---				

4 .inci kat 1 .inci kolonun cokemesi hali

$$\begin{array}{ccc} *{(-149)}-----{(-331)}*{(+257)}-----{(+28)}* \\ [ +149] & [ +74] & [ -28] \\ \vdots & \vdots & \vdots \\ [ +136] & [ +72] & [ -25] \\ *{(-327)}-----{(-438)}*{(+255)}-----{(+58)}* \\ [ +191] & [ +111] & [ -33] \\ \vdots & \vdots & \vdots \\ [ +187] & [ +109] & [ -32] \\ *{(-362)}-----{(-463)}*{(+248)}-----{(+61)}* \\ [ +174] & [ +105] & [ -29] \\ \vdots & \vdots & \vdots \\ [ +74] & [ +49] & [ -11] \\ *{(-52)}-----{(-36)}*{(-7)}-----{(+5)}* \\ [ -23] & [ -7] & [ +6] \\ \vdots & \vdots & \vdots \\ [ -9] & [ -3] & [ +2] \\ *{(+6)}-----{(+3)}*{(-8)}-----{(-1)}* \\ [ +4] & [ +0] & [ -1] \\ \vdots & \vdots & \vdots \\ [ +1] & [ +0] & [ +0] \\ *{(-1)}-----{(-8)}*{(+8)}-----{(+8)}* \\ [ -1] & [ +0] & [ +0] \\ \vdots & \vdots & \vdots \\ [ -8] & [ +0] & [ +0] \\ \hline \end{array}$$

4 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccc} *(+177)-----(+588)*(-588)-----(-177)* \\ [-177] & [ -0] & [ +177] \\ & | & | \\ [-160] & [ +0] & [ +160] \\ & | & | \\ *(+385)-----(+692)*(-692)-----(-385)* \\ [-224] & [ +0] & [ +224] \\ & | & | \\ [-220] & [ +0] & [ +220] \\ & | & | \\ *(+423)-----(+711)*(-711)-----(-423)* \\ [-203] & [ -0] & [ +203] \\ & | & | \\ [-86] & [ -0] & [ +86] \\ & | & | \\ *(+57)-----(+29)*(-29)-----(-57)* \\ [+28] & [ -0] & [ -28] \\ & | & | \\ [+11] & [ -0] & [ -11] \\ & | & | \\ *(-7)-----(-3)*(+3)-----(+7)* \\ [-5] & [ +0] & [ +5] \\ & | & | \\ [-2] & [ +0] & [ +2] \\ & | & | \\ *(+1)-----(+0)*(-0)-----(-1)* \\ [+1] & [ -0] & [ -1] \\ & | & | \\ [+0] & [ -0] & [ -0] \\ & | & | \\ --- & --- & --- \end{array}$$

5 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{l} *{(-152)}-----{(-333)}*{(+258)}-----{(+29)*} \\ [ +152] \quad [ +75] \quad [ -29] \\ | \\ [ +142] \quad [ +74] \quad [ -27] \\ *{(-278)}-----{(-407)}*{(+258)}-----{(+51)*} \\ [ +136] \quad [ +76] \quad [ -24] \\ | \\ [ +68] \quad [ +36] \quad [ -18] \\ *{(-46)}-----{(-29)}*{(-3)}-----{(+6)*} \\ [ -15] \quad [ -3] \quad [ +4] \\ | \\ [ -6] \quad [ -2] \quad [ +2] \\ *{(+4)}-----{(+2)}*{(-8)}-----{(-1)*} \\ [ +2] \quad [ +0] \quad [ -1] \\ | \\ [ +1] \quad [ +0] \quad [ -0] \\ *{(-8)}-----{(-8)}*{(+0)}-----{(+0)*} \\ [ -8] \quad [ +0] \quad [ +0] \\ | \\ [ -8] \quad [ +0] \quad [ +0] \\ *{(+8)}-----{(+8)}*{(-8)}-----{(-8)*} \\ [ +8] \quad [ -8] \quad [ -8] \\ | \\ [ +8] \quad [ -8] \quad [ -8] \\ \hline \end{array}$$

5 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{c} *(+180)-----(+590)*(-590)-----(-180)* \\ [-180] \quad [ -0] \quad [ +180] \\ \\ [-169] \quad [ +0] \quad [ +169] \\ *(+329)-----(+664)*(-664)-----(-329)* \\ [-160] \quad [ +0] \quad [ +160] \\ \\ [-70] \quad [ +0] \quad [ +70] \\ *[+52]-----(+26)*(-26)-----(-52)* \\ [+18] \quad [ -0] \quad [ -18] \\ \\ [+8] \quad [ -0] \quad [ -8] \\ *(-5)-----(-3)*(+3)-----(+5)* \\ [-3] \quad [ +0] \quad [ +3] \\ \\ [-1] \quad [ +0] \quad [ +1] \\ *[+1]-----(+0)*(-0)-----(-1)* \\ [+0] \quad [ -0] \quad [ -0] \\ \\ [+0] \quad [ -0] \quad [ -0] \\ *(-0)-----(-0)*(+0)-----(+0)* \\ [-0] \quad [ +0] \quad [ +0] \\ \\ [-0] \quad [ +0] \quad [ +0] \\ \hline \end{array}$$

6 .inci kat 1 .inci kolonun coknesi hali

$$\begin{array}{c} *(-110)-----\{-300\}*(+257)-----\{ +22\}* \\ [ +110] \quad [ +51] \quad [ -22] \\ | \quad | \quad | \\ [ +51] \quad [ +25] \quad [ -10] \\ | \quad | \quad | \\ *(-41)-----\{-24\}*\{ +0\}-----\{ +7\}* \\ [ -9] \quad [ -1] \quad [ +2] \\ | \quad | \quad | \\ [ -4] \quad [ -1] \quad [ +1] \\ | \quad | \quad | \\ *(+3)-----\{ +1\}*\{ -1\}-----\{ -1\}* \\ [ +1] \quad [ -0] \quad [ -0] \\ | \quad | \quad | \\ [ +0] \quad [ -0] \quad [ -0] \\ | \quad | \quad | \\ *(-0)-----\{ -0\}*\{ +0\}-----\{ +0\}* \\ [ -0] \quad [ +0] \quad [ +0] \\ | \quad | \quad | \\ [ -0] \quad [ +0] \quad [ +0] \\ | \quad | \quad | \\ *(+0)-----\{ +0\}*\{ -0\}-----\{ -0\}* \\ [ +0] \quad [ -0] \quad [ -0] \\ | \quad | \quad | \\ [ +0] \quad [ -0] \quad [ -0] \\ | \quad | \quad | \\ *(-0)-----\{ -0\}*\{ +0\}-----\{ +0\}* \\ [ -0] \quad [ +0] \quad [ +0] \\ | \quad | \quad | \\ [ -0] \quad [ +0] \quad [ +0] \\ | \quad | \quad | \\ \hline \end{array}$$

6 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{c} *{(+132)}-----{+566}*{(-566)}-----{(-132)}* \\ [-132] \quad [ -0] \quad [ +132] \\ | \\ [-60] \quad [ -0] \quad [ +60] \\ | \\ *{(+49)}-----{(+24)}*{(-24)}-----{(-49)}* \\ [+12] \quad [ -0] \quad [ -12] \\ | \\ [+5] \quad [ -0] \quad [ -5] \\ | \\ *{(-4)}-----{(-2)}*{(+2)}-----{(+4)}* \\ [-1] \quad [ -0] \quad [ +1] \\ | \\ [-1] \quad [ -0] \quad [ +1] \\ | \\ *{(+0)}-----{(+0)}*{(-0)}-----{(-0)}* \\ [+0] \quad [ -0] \quad [ -0] \\ | \\ [+0] \quad [ -0] \quad [ -0] \\ | \\ *{(-0)}-----{(-0)}*{(+0)}-----{(+0)}* \\ [-0] \quad [ +0] \quad [ +0] \\ | \\ [-0] \quad [ +0] \quad [ +0] \\ | \\ *{(+0)}-----{(+0)}*{(-0)}-----{(-0)}* \\ [+0] \quad [ -0] \quad [ -0] \\ | \\ [+0] \quad [ -0] \quad [ -0] \\ \hline \end{array}$$

SISTEM GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{c} \text{---} \quad \text{---} \quad \text{---} \\ | \quad | \quad | \quad | \\ h \quad 0.22k \quad 0.22k \quad 0.22k \quad 0.22k \\ | \quad | \quad | \quad | \\ \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(-114) & *(-322)*(+273) & *(+76)*(-63) & *(-5)* \\ [ +114] & [ +49] & [ -13] & [ +5] \\ [ +57] & [ +24] & [ -6] & [ +3] \\ \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(+142) & *(+643)*(-658) & *(-461)*(+385) & *(+33)* \\ [ -142] & [ +15] & [ +77] & [ -33] \\ [ -71] & [ +8] & [ +38] & [ -17] \\ \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

SISTEM GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{c} \text{---} \quad \text{---} \quad \text{---} \\ | \quad | \quad | \\ h \quad 0.22k \quad 0.22k \quad 0.22k \quad 0.22k \\ | \quad | \quad | \quad | \\ \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \end{array}$$

$$\begin{array}{c} \text{---} \quad \text{---} \quad \text{---} \\ | \quad | \quad | \\ h \quad 0.34k \quad 0.34k \quad 0.34k \quad 0.34k \\ | \quad | \quad | \quad | \\ \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(-152) & *(-344)*(+272) & *(+78)*(-61) & *(-7)* \\ [ +152] & [ +72] & [ -17] & [ +7] \\ [ +143] & [ +71] & [ -16] & [ +6] \\ *(-283) & *(-415)*(+269) & *(+86)*(-54) & *(-11)* \\ [ +140] & [ +75] & [ -16] & [ +5] \\ [ +70] & [ +37] & [ -8] & [ +3] \\ \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

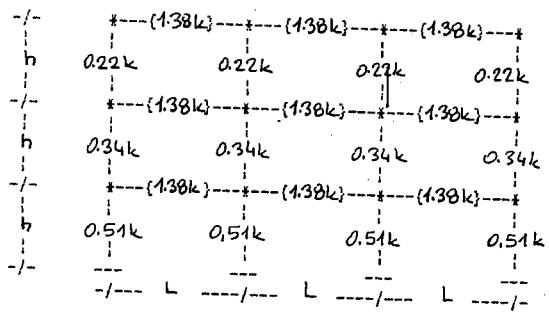
$$\begin{array}{cccc} *(+187) & ----- & (+659)*(-676) & ----- & (-483)*(+376) & ----- & (+41)* \\ [-187] & \mid & [+18] & \mid & [+107] & \mid & [-41] \\ & | & | & | & | & | & | \\ [-174] & \mid & [+15] & \mid & [+102] & \mid & [-37] \\ & | & | & | & | & | & | \\ *(+343) & ----- & (+711)*(-739) & ----- & (-556)*(+349) & ----- & (+71)* \\ [-169] & \mid & [+13] & \mid & [+104] & \mid & [-34] \\ & | & | & | & | & | & | \\ [-85] & \mid & [+6] & \mid & [+52] & \mid & [-17] \\ & | & | & | & | & | & | \\ --- & \mid & --- & \mid & --- & \mid & --- \end{array}$$

2 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(-111) & ----- & (-321)*(+272) & ----- & (+76)*(-63) & ----- & (-5)* \\ [+111] & \mid & [+49] & \mid & [-12] & \mid & [+6] \\ & | & | & | & | & | & | \\ [+51] & \mid & [+24] & \mid & [-6] & \mid & [+2] \\ & | & | & | & | & | & | \\ *(-41) & ----- & (-23)*(-1) & ----- & (+3)*(+2) & ----- & (-1)* \\ [-10] & \mid & [-1] & \mid & [+1] & \mid & [-1] \\ & | & | & | & | & | & | \\ [-51] & \mid & [-8] & \mid & [+8] & \mid & [-8] \\ & | & | & | & | & | & | \\ --- & \mid & --- & \mid & --- & \mid & --- \end{array}$$

2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(+138) & ----- & (+642)*(-657) & ----- & (-460)*(+384) & ----- & (+32)* \\ [-138] & \mid & [+14] & \mid & [+75] & \mid & [-32] \\ & | & | & | & | & | & | \\ [-63] & \mid & [+6] & \mid & [+36] & \mid & [-14] \\ & | & | & | & | & | & | \\ *(+49) & ----- & (+16)*(-20) & ----- & (-23)*(-8) & ----- & (+9)* \\ [+14] & \mid & [-3] & \mid & [-4] & \mid & [+4] \\ & | & | & | & | & | & | \\ [+7] & \mid & [-1] & \mid & [-2] & \mid & [+2] \\ & | & | & | & | & | & | \\ --- & \mid & --- & \mid & --- & \mid & --- \end{array}$$



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) * (-343) * (+271) * (+78) * (-6) * \\
 [+150] & \quad [ +71] \quad [ -17] \quad [ +6] \\
 [-136] & \quad [ +70] \quad [ -15] \quad [ +5] \\
 & *(-328) * (-443) * (+264) * (+88) * (-51) * (-12) * \\
 [+191] & \quad [ +108] \quad [ -22] \quad [ +6] \\
 [+187] & \quad [ +107] \quad [ -21] \quad [ +6] \\
 & *(-368) * (-478) * (+258) * (+88) * (-47) * (-12) * \\
 [+181] & \quad [ +106] \quad [ -20] \quad [ +6] \\
 [-91] & \quad [ +53] \quad [ -10] \quad [ +3]
 \end{aligned}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(+184) * (+658) * (-675) * (-481) * (+376) * (+40) * \\
 [-184] & \quad [ +17] \quad [ +105] \quad [ -40] \\
 [-165] & \quad [ +14] \quad [ +99] \quad [ -34] \\
 & *(+393) * (+729) * (-758) * (-581) * (+337) * (+78) * \\
 [-228] & \quad [ +15] \quad [ +145] \quad [ -43] \\
 [-222] & \quad [ +15] \quad [ +143] \quad [ -42] \\
 & *(+437) * (+746) * (-775) * (-685) * (+323) * (+81) * \\
 [-215] & \quad [ +14] \quad [ +139] \quad [ -40] \\
 [-108] & \quad [ +7] \quad [ +78] \quad [ -20]
 \end{aligned}$$

2 .inci kat 1 .inci kolonun çökmesi hali

$*(-153)-----(-344)*(+272)-----(+78)*(-61)-----(-7)*$   
[ +153] [ +72] [ -17] [ +7]  
 $*(-279)-----(-414)*(+269)-----(+86)*(-54)-----(-11)*$   
[ +136] [ +74] [ -15] [ +5]  
 $*(-45)-----(-28)*(-5)-----(+1)*(+3)-----(-1)*$   
[ -15] [ -3] [ +2] [ -1]  
[ -8] [ -1] [ +1] [ -1]  
---

2 .inci kat 2 .inci kolonun çökmesi hali

$*(+188)-----(+659)*(-676)-----(-483)*(+376)-----(+41)*$   
[ -188] [ +18] [ +107] [ -41]  
 $*(+338)-----(+789)*(-737)-----(-554)*(+350)-----(+70)*$   
[ -164] [ +12] [ +101] [ -33]  
 $*(+51)-----(+19)*(-20)-----(-26)*(-13)-----(+7)*$   
[ +21] [ -3] [ -8] [ +6]  
[ +10] [ -2] [ -4] [ +3]  
---

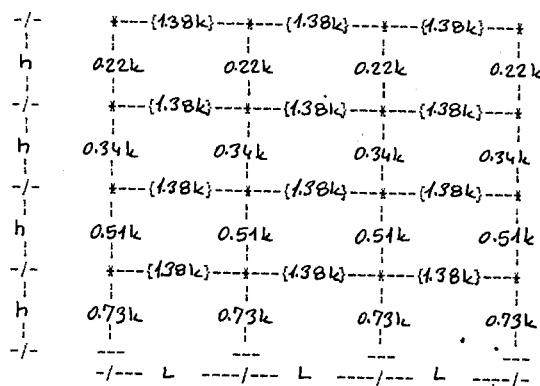
3 .inci kat 1 .inci kolonun çökmesi hali

$*(-111)-----(-321)*(+272)-----(+76)*(-63)-----(-5)*$   
[ +111] [ +49] [ -12] [ +5]  
 $*(-41)-----(-23)*(-1)-----(+3)*(+2)-----(-1)*$   
[ -10] [ -1] [ +1] [ -1]  
 $*(+3)-----(+1)*(-1)-----(-8)*(-8)-----(+8)*$   
[ +1] [ -8] [ -8] [ +8]  
[ +1] [ -8] [ -8] [ +8]  
---

3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(+138) & \cdots & \cdots & \cdots \\ [-138] & [ +14] & [ +75] & [ -32] \\ & | & | & | \\ [-63] & [ +6] & [ +36] & [ -14] \\ & | & | & | \\ *(+49) & \cdots & \cdots & \cdots \\ [-13] & [ -3] & [ -4] & [ +4] \\ & | & | & | \\ [+6] & [ -1] & [ -2] & [ +2] \\ & | & | & | \\ *(-4) & \cdots & \cdots & \cdots \\ [-2] & [ +0] & [ +0] & [ -1] \\ & | & | & | \\ [-1] & [ +0] & [ +0] & [ -0] \\ \hline & \cdots & \cdots & \cdots \end{array}$$

SISTEM GEOMETRİK OZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) * (-343) * (+271) * (+78) * (-61) * (-6) * \\
 [+150] & \quad [ +71] \quad [ -17] \quad [ +6] \\
 [ +137] & \quad [ +70] \quad [ -15] \quad [ +5] \\
 & *(-324) * (-441) * (+264) * (+87) * (-51) * (-12) * \\
 [ +187] & \quad [ +107] \quad [ -21] \quad [ +6] \\
 [ +176] & \quad [ +104] \quad [ -20] \quad [ +5] \\
 & *(-418) * (-504) * (+249) * (+88) * (-42) * (-12) * \\
 [ +242] & \quad [ +150] \quad [ -26] \quad [ +7] \\
 [ +236] & \quad [ +148] \quad [ -25] \quad [ +6] \\
 & *(-454) * (-529) * (+242) * (+88) * (-39) * (-12) * \\
 [ +218] & \quad [ +139] \quad [ -23] \quad [ +6] \\
 [ +189] & \quad [ +70] \quad [ -12] \quad [ +3] \\
 \hline
 \end{aligned}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(+184) * (+658) * (-675) * (-481) * (+376) * (+40) * \\
 [-184] & \quad [ +17] \quad [ +105] \quad [ -40] \\
 [-166] & \quad [ +14] \quad [ +99] \quad [ -35] \\
 & *(+388) * (+728) * (-756) * (-579) * (+337) * (+76) * \\
 [-222] & \quad [ +15] \quad [ +142] \quad [ -42] \\
 [-208] & \quad [ +13] \quad [ +137] \quad [ -38] \\
 & *(+491) * (+767) * (-795) * (-634) * (+306) * (+86) * \\
 [-283] & \quad [ +15] \quad [ +192] \quad [ -48] \\
 [-275] & \quad [ +14] \quad [ +188] \quad [ -46] \\
 & *(+538) * (+783) * (-810) * (-656) * (+293) * (+87) * \\
 [-254] & \quad [ +13] \quad [ +175] \quad [ -42] \\
 [-127] & \quad [ +6] \quad [ +88] \quad [ -21] \\
 \hline
 \end{aligned}$$

2 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(-150) & -(-343)*(+271) & -(+78)*(-61) & -(-6)* \\ \boxed{+150} & \boxed{+71} & \boxed{-17} & \boxed{+61} \\ \\ \boxed{+136} & \boxed{+70} & \boxed{-15} & \boxed{+5} \\ *(-328) & -(-443)*(+265) & -(+88)*(-51) & -(-12)* \\ \boxed{+192} & \boxed{+108} & \boxed{-22} & \boxed{+6} \\ \\ \boxed{+188} & \boxed{+107} & \boxed{-21} & \boxed{+6} \\ *(-363) & -(-468)*(+257) & -(+87)*(-47) & -(-12)* \\ \boxed{+175} & \boxed{+103} & \boxed{-19} & \boxed{+5} \\ \\ \boxed{+75} & \boxed{+49} & \boxed{-8} & \boxed{+2} \\ *(-51) & -(-34)*(-8) & -(+8)*(+4) & -(-8)* \\ \boxed{-24} & \boxed{-6} & \boxed{+3} & \boxed{-2} \\ \\ \boxed{-12} & \boxed{-3} & \boxed{+2} & \boxed{-1} \\ \hline \end{array}$$

2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(+183) & -(+658)*(-675) & -(-481)*(+376) & -(+40)* \\ \boxed{-183} & \boxed{+17} & \boxed{+105} & \boxed{-40} \\ \\ \boxed{-165} & \boxed{+14} & \boxed{+99} & \boxed{-34} \\ *(+394) & -(+729)*(-758) & -(-581)*(+337) & -(+78)* \\ \boxed{-229} & \boxed{+15} & \boxed{+145} & \boxed{-44} \\ \\ \boxed{-224} & \boxed{+15} & \boxed{+143} & \boxed{-42} \\ *(+431) & -(+744)*(-772) & -(-602)*(+324) & -(+88)* \\ \boxed{-207} & \boxed{+13} & \boxed{+135} & \boxed{-37} \\ \\ \boxed{-87} & \boxed{+4} & \boxed{+61} & \boxed{-14} \\ *(+55) & -(+21)*(-21) & -(-30)*(-17) & -(+5)* \\ \boxed{+31} & \boxed{-4} & \boxed{-14} & \boxed{+9} \\ \\ \boxed{+16} & \boxed{-2} & \boxed{-7} & \boxed{+5} \\ \hline \end{array}$$

3 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *{-153} & {-344} & {+272} & {+78} \\ [ +153] & [ +72] & [ -17] & [ +7] \\ & & & \\ *{+143} & [ +71] & [ -16] & [ +6] \\ & & & \\ *{-279} & {-414} & {+269} & {+86} \\ [ +136] & [ +74] & [ -15] & [ +5] \\ & & & \\ [ +60] & [ +36] & [ -7] & [ +2] \\ & & & \\ *{-46} & {-28} & {+5} & {+1} \\ [ -15] & [ -3] & [ +2] & [ -1] \\ & & & \\ [ -6] & [ -1] & [ +1] & [ -0] \\ & & & \\ *{+4} & [ +2] & [ -0] & [ +0] \\ [ +2] & [ -0] & [ -0] & [ +0] \\ & & & \\ [ +1] & [ -0] & [ -0] & [ +0] \\ & & & \\ \hline \end{array}$$

3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *{+188} & {+659} & {-676} & {-483} \\ [ -188] & [ +18] & [ +107] & [ -41] \\ & & & \\ *{-174} & [ +15] & [ +103] & [ -37] \\ & & & \\ *{+338} & {+709} & {+737} & {-554} \\ [ -164] & [ +12] & [ +101] & [ -33] \\ & & & \\ [ -71] & [ +4] & [ +47] & [ -13] \\ & & & \\ *{+523} & {-19} & {-20} & {-26} \\ [ +20] & [ -3] & [ -8] & [ +6] \\ & & & \\ [ +8] & [ -1] & [ -3] & [ +2] \\ & & & \\ *{+5} & [ -2] & [ +2] & [ +2] \\ [ -3] & [ +1] & [ +1] & [ -1] \\ & & & \\ [ -2] & [ +0] & [ +0] & [ -1] \\ & & & \\ \hline \end{array}$$

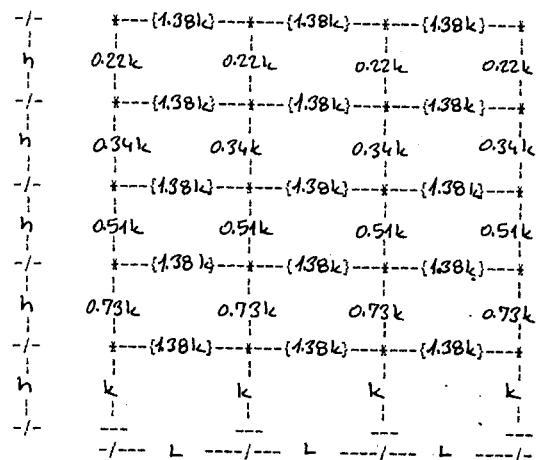
4 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(-111) & -(-321)*(+272) & +76 & *(-63) \\ \hline [+111] & [+49] & [-12] & [+5] \\ & | & | & | \\ [+51] & [+24] & [-6] & [+2] \\ & | & | & | \\ *(-41) & -(-23)*(-1) & +3 & *(+2) \\ \hline [-18] & [-1] & [+1] & [-1] \\ & | & | & | \\ [-4] & [-0] & [+0] & [-0] \\ & | & | & | \\ *(+3) & -(+1)*(-1) & -0 & *(+0) \\ \hline [+1] & [-0] & [-0] & [+0] \\ & | & | & | \\ [+8] & [-0] & [-0] & [+0] \\ & | & | & | \\ *(-0) & -(-0)*(+0) & +0 & *(-0) \\ \hline [-0] & [+0] & [-0] & [-0] \\ & | & | & | \\ [-0] & [+0] & [-0] & [-0] \\ \hline \end{array}$$

4 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} *(+138) & -(+642)*(-657) & -(-460)*(+384) & -(+32)* \\ \hline [-138] & [+14] & [+75] & [-32] \\ & | & | & | \\ [-63] & [+6] & [+36] & [-14] \\ & | & | & | \\ *(+49) & -(+16)*(-20) & -(-23)*(-8) & -(+10)* \\ \hline [+13] & [-3] & [-4] & [+4] \\ & | & | & | \\ [+6] & [-1] & [-2] & [+2] \\ & | & | & | \\ *(-4) & -(-1)*(+2) & -(+2)*(+0) & -(-1)* \\ \hline [-2] & [+0] & [+0] & [-1] \\ & | & | & | \\ [-1] & [+0] & [+0] & [-0] \\ & | & | & | \\ *(+0) & -(+0)*(-0) & -(-0)*(+0) & -(+0)* \\ \hline [+0] & [-0] & [-0] & [+0] \\ & | & | & | \\ [+0] & [-0] & [-0] & [+0] \\ \hline \end{array}$$

SISTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çokmesi hali

$*\{-150\} - \{-343\} * \{+271\} - \{+70\} * \{-61\} - \{-6\}$			
[ +150]	[ +71]	[ -17]	[ +6]
[ +137]	[ +70]	[ -15]	[ +5]
	$*\{-324\} - \{-441\} * \{+264\} - \{+87\} * \{-51\} - \{-12\}$		
[ +187]	[ +107]	[ -21]	[ +6]
[ +177]	[ +104]	[ -20]	[ +5]
	$*\{-413\} - \{-501\} * \{+249\} - \{+88\} * \{-43\} - \{-12\}$		
[ +235]	[ +147]	[ -25]	[ +6]
[ +220]	[ +143]	[ -23]	[ +5]
	$*\{-507\} - \{-567\} * \{+230\} - \{+86\} * \{-34\} - \{-11\}$		
[ +286]	[ +194]	[ -29]	[ +6]
[ +281]	[ +192]	[ -28]	[ +6]
	$*\{-532\} - \{-587\} * \{+222\} - \{+85\} * \{-31\} - \{-11\}$		
[ +252]	[ +173]	[ -25]	[ +5]
[ +126]	[ +87]	[ -13]	[ +2]
---	---	---	---

1 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(+184) & \cdots & \cdots & \cdots \\ [-184] & [ +17] & [ +105] & [ -48] \\ & & & \\ [-166] & [ +14] & [ +99] & [ -35] \\ & & & \\ *(+389) & \cdots & \cdots & \cdots \\ [-223] & [ +15] & [ +143] & [ -42] \\ & & & \\ [-210] & [ +13] & [ +137] & [ -38] \\ & & & \\ *(+485) & \cdots & \cdots & \cdots \\ [-275] & [ +14] & [ +187] & [ -46] \\ & & & \\ [-255] & [ +12] & [ +178] & [ -41] \\ & & & \\ *(+584) & \cdots & \cdots & \cdots \\ [-329] & [ +13] & [ +237] & [ -48] \\ & & & \\ [-322] & [ +13] & [ +233] & [ -47] \\ & & & \\ *(+610) & \cdots & \cdots & \cdots \\ [-288] & [ +11] & [ +209] & [ -41] \\ & & & \\ [-144] & [ +6] & [ +105] & [ -21] \\ & & & \\ \cdots & \cdots & \cdots & \cdots \end{array}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(-150) & \cdots & \cdots & \cdots \\ [+150] & [ +71] & [ -17] & [ +6] \\ & & & \\ [+137] & [ +70] & [ -15] & [ +5] \\ & & & \\ *(-324) & \cdots & \cdots & \cdots \\ [+187] & [ +107] & [ -21] & [ +6] \\ & & & \\ [+176] & [ +104] & [ -19] & [ +5] \\ & & & \\ *(-419) & \cdots & \cdots & \cdots \\ [+243] & [ +150] & [ -26] & [ +7] \\ & & & \\ [+238] & [ +149] & [ -26] & [ +6] \\ & & & \\ *(-448) & \cdots & \cdots & \cdots \\ [+210] & [ +135] & [ -22] & [ +5] \\ & & & \\ [+87] & [ +62] & [ -8] & [ +1] \\ & & & \\ *(-54) & \cdots & \cdots & \cdots \\ [-33] & [ -11] & [ +5] & [ -2] \\ & & & \\ [-17] & [ -6] & [ +2] & [ -1] \\ & & & \\ \cdots & \cdots & \cdots & \cdots \end{array}$$

## 2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(+184) - (-658)*(-675) - (-481)*(+376) - (+40)* \\
 & [-184] \quad [ +17] \quad [ +105] \quad [ -40] \\
 & [-166] \quad [ +14] \quad [ +99] \quad [ -35] \\
 & *(+388) - (+728)*(-756) - (-579)*(+337) - (+76)* \\
 & [-222] \quad [ +15] \quad [ +142] \quad [ -42] \\
 & [-208] \quad [ +13] \quad [ +137] \quad [ -38] \\
 & *(+492) - (+768)*(-796) - (-635)*(+306) - (+86)* \\
 & [-284] \quad [ +15] \quad [ +192] \quad [ -48] \\
 & [-279] \quad [ +15] \quad [ +189] \quad [ -47] \\
 & *(+522) - (+780)*(-807) - (-652)*(+294) - (+86)* \\
 & [-243] \quad [ +12] \quad [ +169] \quad [ -39] \\
 & [-98] \quad [ +3] \quad [ +73] \quad [ -13] \\
 & *(+56) - (+23)*(-21) - (-32)*(-21) - (+2)* \\
 & [+43] \quad [ -5] \quad [ -21] \quad [ +12] \\
 & [+21] \quad [ -2] \quad [ -10] \quad [ +6] \\
 & --- \quad --- \quad --- \quad ---
 \end{aligned}$$

## 3 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) - (-343)*(+271) - (+78)*(-61) - (-6)* \\
 & [+150] \quad [ +71] \quad [ -17] \quad [ +6] \\
 & [+136] \quad [ +70] \quad [ -15] \quad [ +5] \\
 & *(-328) - (-443)*(+265) - (+88)*(-51) - (-12)* \\
 & [+192] \quad [ +108] \quad [ -22] \quad [ +6] \\
 & [+188] \quad [ +107] \quad [ -21] \quad [ +6] \\
 & *(-363) - (-468)*(+257) - (+87)*(-47) - (-12)* \\
 & [+175] \quad [ +103] \quad [ -19] \quad [ +5] \\
 & [+75] \quad [ +49] \quad [ -8] \quad [ +2] \\
 & *(-52) - (-34)*(-8) - (+0)*(+4) - (-0)* \\
 & [-23] \quad [ -6] \quad [ +3] \quad [ -2] \\
 & [-9] \quad [ -3] \quad [ +1] \quad [ -1] \\
 & *(+5) - (+3)*(-0) - (-1)*(-0) - (+0)* \\
 & [+4] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & [+2] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & --- \quad --- \quad --- \quad ---
 \end{aligned}$$

3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc}
 *{+183} & {-658} *{(-675)} & {-(-481)} *{(+376)} & {-(+40)} * \\
 [-183] & [+17] & [+105] & [-40] \\
 \\ 
 [-165] & [+14] & [+99] & [-34] \\
 *{(+394)} & {(-729)} *{(-758)} & {-(-581)} *{(+337)} & {-(+78)} * \\
 [-229] & [+15] & [+145] & [-44] \\
 \\ 
 [-224] & [+15] & [+143] & [-42] \\
 *{(+431)} & {(-744)} *{(-772)} & {-(-602)} *{(+324)} & {-(+80)} * \\
 [-207] & [+13] & [+135] & [-37] \\
 \\ 
 [-87] & [+4] & [+60] & [-14] \\
 *{(+56)} & {-(-22)} *{(-22)} & {-(-30)} *{(-17)} & {-(+5)} * \\
 [+38] & [-4] & [-13] & [+9] \\
 \\ 
 [+12] & [-1] & [-6] & [+3] \\
 *{(-7)} & {-(-2)} *{(+3)} & {-(+3)} *{(+1)} & {-(-1)} * \\
 [-5] & [+1] & [+2] & [-2] \\
 \\ 
 [-3] & [+1] & [+1] & [-1] \\
 \hline
 \end{array}$$

4 .inci kat 1 .inci kolonun çökmesi hali

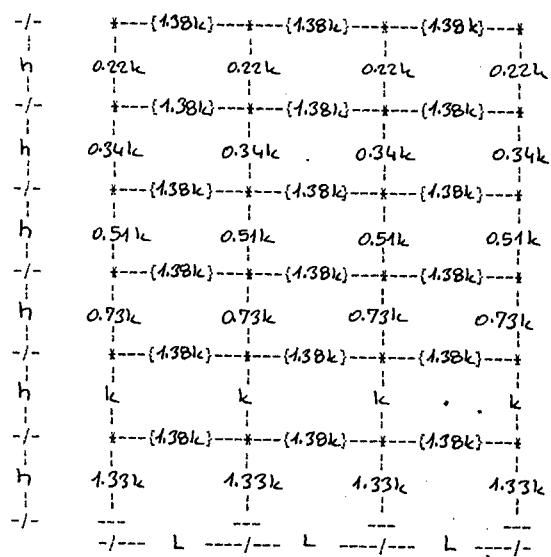
$$\begin{array}{cccc}
 *{(-153)} & {-(-344)} *{(+272)} & {-(+78)} *{(-61)} & {-(-7)} * \\
 [+153] & [+2] & [-17] & [+7] \\
 \\ 
 [+143] & [+71] & [-16] & [+6] \\
 *{(-279)} & {-(-414)} *{(+269)} & {-(+86)} *{(-54)} & {-(-11)} * \\
 [+136] & [+74] & [-15] & [+5] \\
 \\ 
 [+60] & [+36] & [-7] & [+2] \\
 *{(-46)} & {-(-28)} *{(-5)} & {-(+1)} *{(+3)} & {-(-1)} * \\
 [-15] & [-3] & [+2] & [-1] \\
 \\ 
 [-6] & [-1] & [+1] & [-0] \\
 *{(+4)} & {-(+2)} *{(-0)} & {-(-0)} *{(-0)} & {-(+0)} * \\
 [+2] & [-0] & [-0] & [+0] \\
 \\ 
 [+1] & [-0] & [-0] & [+0] \\
 *{(-0)} & {-(-0)} *{(+0)} & {-(+0)} *{(-0)} & {-(-0)} * \\
 [-0] & [+0] & [+0] & [-0] \\
 \\ 
 [-0] & [+0] & [+0] & [-0] \\
 \hline
 \end{array}$$

$$\begin{aligned}
 & *(+188)-----(+659)*(-676)-----(-483)*(+376)-----(+41)* \\
 [ -188] & \quad [ +18] \quad [ +187] \quad [ -41] \\
 \\ 
 [ -174] & \quad [ +15] \quad [ +103] \quad [ -37] \\
 & *(+338)-----(+709)*(-737)-----(-554)*(+358)-----(+70)* \\
 [ -164] & \quad [ +12] \quad [ +101] \quad [ -33] \\
 \\ 
 [ -71] & \quad [ +4] \quad [ +47] \quad [ -13] \\
 & *(+52)-----(+19)*(-20)-----(-26)*(-13)-----(+7)* \\
 [ +20] & \quad [ -3] \quad [ -8] \quad [ +6] \\
 \\ 
 [ +8] & \quad [ -1] \quad [ -3] \quad [ +2] \\
 & *(-5)-----(-2)*(+2)-----(+2)*(+0)-----(-1)* \\
 [ -3] & \quad [ +1] \quad [ +1] \quad [ -1] \\
 \\ 
 [ -1] & \quad [ +0] \quad [ +0] \quad [ -0] \\
 & *(+1)-----(+0)*(-0)-----(-0)*(+0)-----(+0)* \\
 [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \\
 \\ 
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \\
 \hline
 \end{aligned}$$

$$\begin{aligned}
 & *(-111)-----(-321)*(+272)-----(+76)*(-63)-----(-5)* \\
 [ +111] & \quad [ +49] \quad [ -12] \quad [ +5] \\
 \\ 
 [ +51] & \quad [ +24] \quad [ -6] \quad [ +2] \\
 & *(-41)-----(-23)*(-1)-----(+3)*(+2)-----(-1)* \\
 [ -10] & \quad [ -1] \quad [ +1] \quad [ -1] \\
 \\ 
 [ -4] & \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *(+3)-----(+1)*(-1)-----(-0)*(+0)-----(+0)* \\
 [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \\
 \\ 
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \\
 & *(-0)-----(-0)*(+0)-----(+0)*(-0)-----(-0)* \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \\
 \\ 
 [ -0] & \quad [ +0] \quad [ +0] \quad [ -0] \\
 & *(+0)-----(+0)*(-0)-----(-0)*(+0)-----(+0)* \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \\
 \\ 
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \\
 \hline
 \end{aligned}$$

5 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(+138)-----(-642)*(-657)-----(-460)*(+384)-----(+32)* \\ [-138] \quad [+141] \quad [+75] \quad [-32] \\ | \quad | \quad | \quad | \\ [-63] \quad [+6] \quad [+36] \quad [-14] \\ *(+49)-----(+16)*(-20)-----(-23)*(-8)-----(+10)* \\ [+13] \quad [-3] \quad [-4] \quad [+4] \\ | \quad | \quad | \quad | \\ [+6] \quad [-1] \quad [-2] \quad [+2] \\ *(-4)-----(-1)*(+2)-----(+2)*(+0)-----(-1)* \\ [-2] \quad [+0] \quad [+0] \quad [-1] \\ | \quad | \quad | \quad | \\ [-1] \quad [+0] \quad [+0] \quad [-0] \\ *(+0)-----(+0)*(-0)-----(-0)*(+0)-----(+0)* \\ [+0] \quad [-0] \quad [-0] \quad [+0] \\ | \quad | \quad | \quad | \\ [-0] \quad [+0] \quad [+0] \quad [-0] \\ | \quad | \quad | \quad | \\ [-0] \quad [+0] \quad [+0] \quad [-0] \\ \hline \end{array}$$



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) - (-343)*(+271) - (+78)*(-61) - (-6)* \\
 [+150] & \quad [ +71] \quad [ -17] \quad [ +6] \\
 \\
 [+137] & \quad [ +78] \quad [ -15] \quad [ +5] \\
 & *(-324) - (-441)*(+264) - (+87)*(-51) - (-12)* \\
 [+187] & \quad [ +107] \quad [ -21] \quad [ +6] \\
 \\
 [+177] & \quad [ +104] \quad [ -20] \quad [ +5] \\
 & *(-413) - (-501)*(+249) - (+88)*(-43) - (-12)* \\
 [+236] & \quad [ +148] \quad [ -25] \quad [ +6] \\
 \\
 [+222] & \quad [ +143] \quad [ -23] \quad [ +5] \\
 & *(-500) - (-563)*(+230) - (+86)*(-35) - (-11)* \\
 [+278] & \quad [ +190] \quad [ -28] \quad [ +6] \\
 \\
 [+259] & \quad [ +182] \quad [ -25] \quad [ +5] \\
 & *(-585) - (-627)*(+207) - (+82)*(-26) - (-10)* \\
 [+326] & \quad [ +237] \quad [ -30] \quad [ +5] \\
 \\
 [+321] & \quad [ +235] \quad [ -30] \quad [ +5] \\
 & *(-602) - (-641)*(+200) - (+80)*(-25) - (-9)* \\
 [+281] & \quad [ +206] \quad [ -26] \quad [ +4] \\
 \\
 [+140] & \quad [ +103] \quad [ -13] \quad [ +2]
 \end{aligned}$$

1 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned} & *{(+184)}-----{(+658)}*{(-675)}-----{(-481)}*{(+376)}-----{(+40)}* \\ [-184] & \quad [ +17] \quad [ +105] \quad [ -40] \\ \\ & *{(+389)}-----{(+728)}*{(-756)}-----{(-579)}*{(+337)}-----{(+76)}* \\ [-223] & \quad [ +15] \quad [ +143] \quad [ -42] \\ \\ & *{(+486)}-----{(+766)}*{(-793)}-----{(-632)}*{(+307)}-----{(+84)}* \\ [-276] & \quad [ +15] \quad [ +188] \quad [ -46] \\ \\ & *{(+577)}-----{(+803)}*{(-828)}-----{(-684)}*{(+274)}-----{(+88)}* \\ [-319] & \quad [ +13] \quad [ +230] \quad [ -46] \\ \\ & *{(+662)}-----{(+839)}*{(-860)}-----{(-735)}*{(+238)}-----{(+86)}* \\ [-367] & \quad [ +11] \quad [ +279] \quad [ -46] \\ \\ & *{(+677)}-----{(+846)}*{(-865)}-----{(-745)}*{(+230)}-----{(+84)}* \\ [-316] & \quad [ +9] \quad [ +241] \quad [ -39] \\ \\ & *{(+58)}-----{(+5)}-----{(+120)}-----{(-20)} \\ \hline \end{aligned}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$*\{-150\} - \{-343\} * \{+271\} - \{+78\} * \{-61\} - \{-6\} *$			
[ +150]	[ +71]	[ -17]	[ +6]
$*\{-324\} - \{-441\} * \{+264\} - \{+87\} * \{-51\} - \{-12\} *$			
[ +187]	[ +107]	[ -21]	[ +6]
$*\{-412\} - \{-501\} * \{+249\} - \{+88\} * \{-43\} - \{-12\} *$			
[ +235]	[ +147]	[ -25]	[ +6]
$*\{-508\} - \{-567\} * \{+230\} - \{+87\} * \{-34\} - \{-11\} *$			
[ +288]	[ +195]	[ -29]	[ +6]
$*\{-525\} - \{-582\} * \{+223\} - \{+84\} * \{-32\} - \{-10\} *$			
[ +241]	[ +167]	[ -24]	[ +5]
$*\{-54\} - \{-41\} * \{-15\} - \{-3\} * \{+5\} - \{+1\} *$			
[ -43]	[ -18]	[ +6]	[ -2]
$[ -21] - [ -9] - [ +3] - [ -1]$			
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2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(+184) & -(+658)*(-675) & -(-481)*(+376) & -(+40)* \\ [-184] & [ +17] & [ +185] & [ -48] \\ \\ [-166] & [ +14] & [ +99] & [ -35] \\ *(+389) & -(+728)*(-756) & -(-579)*(+337) & -(+77)* \\ [-223] & [ +15] & [ +143] & [ -42] \\ \\ [-210] & [ +13] & [ +137] & [ -38] \\ *(+485) & -(+765)*(-793) & -(-631)*(+307) & -(+84)* \\ [-275] & [ +14] & [ +187] & [ -46] \\ \\ [-255] & [ +12] & [ +178] & [ -40] \\ *(+585) & -(+806)*(-831) & -(-688)*(+272) & -(+89)* \\ [-331] & [ +13] & [ +237] & [ -49] \\ \\ [-326] & [ +13] & [ +235] & [ -48] \\ *(+601) & -(+813)*(-837) & -(-699)*(+263) & -(+87)* \\ [-275] & [ +10] & [ +201] & [ -38] \\ \\ [-107] & [ +2] & [ +84] & [ -12] \\ *(+53) & -(+23)*(-20) & -(-32)*(-23) & -(-1)* \\ [+54] & [ -5] & [ -29] & [ +13] \\ \\ [+27] & [ -2] & [ -14] & [ +7] \\ \hline \end{array}$$

3 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *{-150}-----{-343}*{(+271)}-----{(+78)*{(-61)}-----{(-6)*} \\ [ +150] & [ +71] & [ -17] & [ +6] \\ [ +137] & [ +70] & [ -15] & [ +5] \\ *{-324}-----{-441}*{(+264)}-----{(+87)*{(-54)}-----{(-12)*} \\ [ +187] & [ +107] & [ -21] & [ +6] \\ [ +176] & [ +104] & [ -19] & [ +5] \\ *{-419}-----{-504}*{(+249)}-----{(+88)*{(-42)}-----{(-12)*} \\ [ +243] & [ +150] & [ -26] & [ +7] \\ [ +238] & [ +149] & [ -26] & [ +6] \\ *{-447}-----{-526}*{(+242)}-----{(+87)*{(-39)}-----{(-11)*} \\ [ +209] & [ +135] & [ -22] & [ +5] \\ [ +86] & [ +62] & [ -8] & [ +1] \\ *{(-55)}-----{(-39)*{(-12)}-----{(-1)*{(+5)}-----{(+0)*} \\ [ -32] & [ -11] & [ +4] & [ -2] \\ [ -12] & [ -5] & [ +2] & [ -1] \\ *{(+7)}-----{(+4)*{(+0)}-----{(-0)*{(-1)}-----{(+0)*} \\ [ +6] & [ +1] & [ -1] & [ +1] \\ [ +3] & [ +0] & [ -0] & [ +0] \\ \hline \end{array}$$

3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(+184) & \cdots & (-658)*(-675) & \cdots & (-481)*(+376) & \cdots & (+48)* \\ [-184] & & [ +17] & & [ +105] & & [ -40] \\ | & & | & & | & & | \\ [-166] & & [ +14] & & [ +99] & & [ -35] \\ | & & | & & | & & | \\ *(+388) & \cdots & (-728)*(-756) & \cdots & (-579)*(+337) & \cdots & (+76)* \\ [-222] & & [ +15] & & [ +142] & & [ -42] \\ | & & | & & | & & | \\ [-208] & & [ +13] & & [ +137] & & [ -38] \\ | & & | & & | & & | \\ *(+492) & \cdots & (-768)*(-796) & \cdots & (-635)*(+306) & \cdots & (+86)* \\ [-284] & & [ +15] & & [ +192] & & [ -48] \\ | & & | & & | & & | \\ [-279] & & [ +15] & & [ +189] & & [ -47] \\ | & & | & & | & & | \\ *(+522) & \cdots & (-788)*(-807) & \cdots & (-652)*(+294) & \cdots & (+86)* \\ [-243] & & [ +12] & & [ +169] & & [ -39] \\ | & & | & & | & & | \\ [-98] & & [ +3] & & [ +73] & & [ -13] \\ | & & | & & | & & | \\ *(+57) & \cdots & (-23)*(-22) & \cdots & (-32)*(-21) & \cdots & (+2)* \\ [+41] & & [ -5] & & [ -20] & & [ +11] \\ | & & | & & | & & | \\ [+16] & & [ -2] & & [ -8] & & [ +4] \\ | & & | & & | & & | \\ *(-8) & \cdots & (-3)*(-3) & \cdots & (-4)*(-2) & \cdots & (-1)* \\ [-8] & & [ +1] & & [ +3] & & [ -3] \\ | & & | & & | & & | \\ [-4] & & [ +1] & & [ +1] & & [ -1] \\ | & & | & & | & & | \\ --- & & --- & & --- & & --- \end{array}$$

4 .inci kat 1 .inci kolonun cokemesi hali

$$\begin{array}{cccc} *{-150} & ----- & {-343} & *{+271} \\ \vdots & & \vdots & \vdots \\ [ +150] & [ +71] & [ -17] & [ +6] \\ & & & \\ [ +136] & [ +70] & [ -15] & [ +5] \\ & & & \\ *{-328} & ----- & {-443} & *{+265} \\ \vdots & & \vdots & \vdots \\ [ +192] & [ +108] & [ -22] & [ +6] \\ & & & \\ [ +188] & [ +107] & [ -21] & [ +6] \\ & & & \\ *{-363} & ----- & {-468} & *{+257} \\ \vdots & & \vdots & \vdots \\ [ +175] & [ +103] & [ -19] & [ +5] \\ & & & \\ [ +75] & [ +49] & [ -8] & [ +2] \\ & & & \\ *{-52} & ----- & {-34} & *{+8} \\ \vdots & & \vdots & \vdots \\ [ -23] & [ -6] & [ +3] & [ -2] \\ & & & \\ [ -9] & [ -3] & [ +1] & [ -1] \\ & & & \\ *{+6} & ----- & {-3} & *{+0} \\ \vdots & & \vdots & \vdots \\ [ +4] & [ +0] & [ -0] & [ +0] \\ & & & \\ [ +1] & [ +0] & [ -0] & [ +0] \\ & & & \\ *{(-1)} & ----- & {-0} & *{+0} \\ \vdots & & \vdots & \vdots \\ [ -1] & [ +0] & [ +0] & [ -0] \\ & & & \\ [ -8] & [ +0] & [ +0] & [ -0] \\ \hline \end{array}$$

4 .inci kat 2 .inci kolonun çökmesi hali

\*{+183}-----{+658}\*{(-675)}-----{(-481)\*{(+376)}-----{ +40}\*  
[ -183] [ +17] [ +105] [ -40]  
[ -165] [ +14] [ +99] [ -34]  
\*{(+394)}-----{(+729)\*{(-758)}}-----{(-581)\*{(+337)}}-----{ +78}\*  
[ -229] [ +15] [ +145] [ -44]  
[ -224] [ +15] [ +143] [ -42]  
\*{(+431)}-----{(+744)\*{(-772)}}-----{(-602)\*{(+324)}}-----{ +80}\*  
[ -207] [ +13] [ +135] [ -37]  
[ -87] [ +4] [ +68] [ -14]  
\*{ +56}-----{ +22)\*{(-22)}-----{ -30}\*{(-17)}-----{ +5}\*  
[ +30] [ -4] [ -13] [ +9]  
[ +12] [ -1] [ -6] [ +3]  
\*{(-7)}-----{(-2)\*{ +3}}-----{ +3}\*{(+1)}-----{ -2}\*  
[ -5] [ +1] [ +2] [ -2]  
[ -2] [ +0] [ +1] [ -1]  
\*{ +1}-----{ +0}\*{(-0)}-----{ -0}\*{(-0)}-----{ +0}\*  
[ +1] [ -0] [ -0] [ +0]  
[ +1] [ -0] [ -0] [ +0]  
---

5 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(-153) & ----- & (-344)*(+272) & ----- & (+78)*(-61) & ----- & (-7)* \\ \boxed{+153} & & \boxed{+72} & & \boxed{-17} & & \boxed{+7} \\ & & | & & | & & | \\ \boxed{+143} & & \boxed{+71} & & \boxed{-16} & & \boxed{+6} \\ & & | & & | & & | \\ *(-279) & ----- & (-414)*(+269) & ----- & (+86)*(-54) & ----- & (-11)* \\ \boxed{+136} & & \boxed{+74} & & \boxed{-15} & & \boxed{+5} \\ & & | & & | & & | \\ \boxed{+68} & & \boxed{+36} & & \boxed{-7} & & \boxed{+2} \\ & & | & & | & & | \\ *(-46) & ----- & (-28)*(-5)*(+1)*(+3) & ----- & (-1)* \\ \boxed{-15} & & \boxed{-3} & & \boxed{+2} & & \boxed{-1} \\ & & | & & | & & | \\ \boxed{-6} & & \boxed{-1} & & \boxed{+1} & & \boxed{-8} \\ & & | & & | & & | \\ *(+4) & ----- & (+2)*(-8)*(-8)*(-8) & ----- & (+8)* \\ \boxed{+2} & & \boxed{-8} & & \boxed{-8} & & \boxed{+8} \\ & & | & & | & & | \\ \boxed{+1} & & \boxed{-8} & & \boxed{-8} & & \boxed{+8} \\ & & | & & | & & | \\ *(-8) & ----- & (-8)*(+8)*(+8)*(-8) & ----- & (-8)* \\ \boxed{-8} & & \boxed{+8} & & \boxed{+8} & & \boxed{-8} \\ & & | & & | & & | \\ \boxed{-8} & & \boxed{+8} & & \boxed{+8} & & \boxed{-8} \\ & & | & & | & & | \\ *(+8) & ----- & (+8)*(-8)*(-8)*(+8) & ----- & (+8)* \\ \boxed{+8} & & \boxed{-8} & & \boxed{-8} & & \boxed{+8} \\ & & | & & | & & | \\ \boxed{+8} & & \boxed{-8} & & \boxed{-8} & & \boxed{+8} \\ & & | & & | & & | \\ \hline & & \hline & & \hline & & \hline \end{array}$$

5 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned} & *(+188)-----(-659)*(-676)-----(-483)*(+376)-----(+41)* \\ [-188] & \quad [ +18] \quad [ +107] \quad [ -41] \\ & \\ [-174] & \quad [ +15] \quad [ +103] \quad [ -37] \\ & *(+338)-----(+789)*(-737)-----(-554)*(+358)-----(+78)* \\ [-164] & \quad [ +12] \quad [ +101] \quad [ -33] \\ & \\ [-71] & \quad [ +4] \quad [ +47] \quad [ -13] \\ & *(+52)-----(+19)*(-20)-----(-26)*(-13)-----(+7)* \\ [+20] & \quad [ -3] \quad [ -8] \quad [ +6] \\ & \\ [+8] & \quad [ -1] \quad [ -3] \quad [ +2] \\ & *(-5)-----(-2)*(+2)-----(+2)*(+0)-----(-1)* \\ [-3] & \quad [ +1] \quad [ +1] \quad [ -1] \\ & \\ [-1] & \quad [ +0] \quad [ +0] \quad [ -0] \\ & *(+1)-----(+0)*(-0)-----(-0)*(+0)-----(+0)* \\ [+1] & \quad [ -0] \quad [ -0] \quad [ +0] \\ & \\ [+0] & \quad [ -0] \quad [ -0] \quad [ +0] \\ & *(-0)-----(-0)*(+0)-----(+0)*(-0)-----(-0)* \\ [-0] & \quad [ +0] \quad [ +0] \quad [ -0] \\ & \\ [-0] & \quad [ +0] \quad [ +0] \quad [ -0] \\ & \end{aligned}$$

6 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccc} *(-111) & -(-321)*(+272) & -(+76)*(-63) & -(-5)* \\ \boxed{+111} & \boxed{+491} & \boxed{-121} & \boxed{+51} \\ \vdots & \vdots & \vdots & \vdots \\ \boxed{+51} & \boxed{+241} & \boxed{-6} & \boxed{+2} \\ *(-41) & -(-23)*(-1) & -(+3)*(+2) & -(-1)* \\ \boxed{-101} & \boxed{-13} & \boxed{+13} & \boxed{-13} \\ \boxed{-43} & \boxed{-8} & \boxed{+8} & \boxed{-8} \\ *(+3) & -(+1)*(-1) & -(-8)*(+8) & -(+8)* \\ \boxed{+11} & \boxed{-8} & \boxed{-8} & \boxed{+8} \\ \vdots & \vdots & \vdots & \vdots \\ \boxed{+8} & \boxed{-8} & \boxed{-8} & \boxed{+8} \\ *(-8) & -(-8)*(+8) & -(+8)*(-8) & -(-8)* \\ \boxed{-81} & \boxed{+81} & \boxed{-81} & \boxed{-81} \\ \vdots & \vdots & \vdots & \vdots \\ \boxed{-81} & \boxed{+81} & \boxed{-81} & \boxed{-81} \\ *(+8) & -(+8)*(-8) & -(-8)*(+8) & -(+8)* \\ \boxed{+81} & \boxed{-81} & \boxed{+81} & \boxed{+81} \\ \vdots & \vdots & \vdots & \vdots \\ \boxed{+81} & \boxed{-81} & \boxed{+81} & \boxed{+81} \\ *(-8) & -(-8)*(+8) & -(+8)*(-8) & -(-8)* \\ \boxed{-8} & \boxed{+8} & \boxed{-8} & \boxed{-8} \\ \vdots & \vdots & \vdots & \vdots \\ \boxed{-8} & \boxed{+8} & \boxed{-8} & \boxed{-8} \\ \hline \end{array}$$

6 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccc} \times \{+138\} & \times \{+642\} & \times \{-657\} & \times \{-460\} \\ \times \{+384\} & \times \{+32\} & \times \{-460\} & \times \{+384\} \\ \times \{-323\} & \times \{-14\} & \times \{+75\} & \times \{-63\} \\ \times \{-63\} & \times \{+6\} & \times \{+36\} & \times \{-14\} \\ \times \{+49\} & \times \{+16\} & \times \{-20\} & \times \{-23\} \\ \times \{-8\} & \times \{-8\} & \times \{+10\} & \times \{+10\} \\ \times \{+13\} & \times \{-3\} & \times \{-4\} & \times \{+4\} \\ \times \{+6\} & \times \{-1\} & \times \{-2\} & \times \{+2\} \\ \times \{-4\} & \times \{-1\} & \times \{+2\} & \times \{+0\} \\ \times \{+2\} & \times \{+0\} & \times \{+0\} & \times \{-1\} \\ \times \{-1\} & \times \{+0\} & \times \{+0\} & \times \{-0\} \\ \times \{+0\} & \times \{-0\} & \times \{-0\} & \times \{+0\} \\ \times \{+0\} & \times \{-0\} & \times \{-0\} & \times \{+0\} \\ \times \{-0\} & \times \{+0\} & \times \{+0\} & \times \{-0\} \\ \times \{-0\} & \times \{+0\} & \times \{+0\} & \times \{-0\} \\ \times \{+0\} & \times \{-0\} & \times \{-0\} & \times \{+0\} \\ \times \{+0\} & \times \{-0\} & \times \{-0\} & \times \{+0\} \\ \end{array}$$

SISTEM GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{c} \text{---} \\ \text{h} \end{array} \quad \begin{array}{ccccc} *-(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) \\ 0.22k & 0.22k & 0.22k & 0.22k & 0.22k \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} \\ \text{---} & \text{L} & \text{---} / \text{---} & \text{L} & \text{---} / \text{---} & \text{L} & \text{---} / \text{---} & \text{L} & \text{---} / \text{---} \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{ccccc} *(-114) & -(-323)*(+274) & -(+79)*(-67) & -(-19)*(+16) & -(+1)* \\ [-114] & [ +49] & [ -12] & [ +3] & [ -1] \\ [-57] & [ +24] & [ -6] & [ +2] & [ -1] \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{ccccc} *(+142) & -(+648)*(-664) & -(-481)*(+400) & -(+113)*(-95) & -(-8)* \\ [-142] & [ +16] & [ +73] & [ -19] & [ +8] \\ [-71] & [ +8] & [ +37] & [ -9] & [ +4] \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

1 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{array}{ccccc} *(-35) & -(-404)*(+405) & -(+742)*(-742) & -(-485)*(+404) & -(+35)* \\ [+35] & [ -81] & [ +8] & [ +81] & [ -35] \\ [+17] & [ -40] & [ +8] & [ +40] & [ -17] \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

SISTEM GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{c} \text{---} \\ \text{h} \end{array} \quad \begin{array}{ccccc} *-(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) \\ 0.22k & 0.22k & 0.22k & 0.22k & 0.22k \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array}$$

$$\begin{array}{c} \text{---} \\ \text{h} \end{array} \quad \begin{array}{ccccc} *-(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) & -(4.38k) \\ 0.34k & 0.34k & 0.34k & 0.34k & 0.34k \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{ccccc} *(-153) & -(-344)*(+272) & -(+81)*(-65) & -(-18)*(+15) & -(+2)* \\ [+153] & [ +72] & [ -16] & [ +4] & [ -2] \\ [+143] & [ +71] & [ -16] & [ +4] & [ -1] \\ *(-283) & -(-416)*(+270) & -(+88)*(-56) & -(-18)*(+11) & -(+2)* \\ [+141] & [ +75] & [ -16] & [ +3] & [ -1] \\ [+70] & [ +37] & [ -8] & [ +2] & [ -1] \\ \text{---} & \text{---} & \text{---} & \text{---} & \text{---} \end{array}$$

1 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{c}
 *(+188)-----(+663)*(-681)-----(-500)*(+397)-----(+114)*(-90)-----(-10)* \\
 [-188] \quad [ +19] \quad [ +103] \quad [ -24] \quad [ +10] \\
 \\ 
 [-174] \quad [ +16] \quad [ +99] \quad [ -22] \quad [ +8] \\
 *(+344)-----(+713)*(-742)-----(-565)*(+364)-----(+117)*(-73)-----(-15)* \\
 [-170] \quad [ +13] \quad [ +101] \quad [ -22] \quad [ +7] \\
 \\ 
 [-85] \quad [ +7] \quad [ +51] \quad [ -11] \quad [ +4] \\
 \hline
 \end{array}$$

1 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{c}
 *(-43)-----(-393)*(+504)-----(+752)*(-752)-----(-504)*(+393)-----(+43)* \\
 [+43] \quad [ -111] \quad [ -8] \quad [ +111] \quad [ -43] \\
 \\ 
 [+38] \quad [ -106] \quad [ -8] \quad [ +106] \quad [ -38] \\
 *(-73)-----(-359)*(+571)-----(+785)*(-785)-----(-571)*(+359)-----(+73)* \\
 [+35] \quad [ -106] \quad [ -8] \quad [ +106] \quad [ -35] \\
 \\ 
 [+18] \quad [ -53] \quad [ -8] \quad [ +53] \quad [ -18] \\
 \hline
 \end{array}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{c}
 *(-111)-----(-322)*(+273)-----(+79)*(-67)-----(-19)*(+16)-----(+1)* \\
 [+111] \quad [ +49] \quad [ -12] \quad [ +3] \quad [ -11] \\
 \\ 
 [+51] \quad [ +24] \quad [ -5] \quad [ +11] \quad [ -11] \\
 *(-41)-----(-22)*(-1)-----(+2)*(+3)-----(+0)*(-1)-----(+0)* \\
 [-10] \quad [ -1] \quad [ +1] \quad [ -0] \quad [ +0] \\
 \\ 
 [-5] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 \hline
 \end{array}$$

2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{c}
 *(+138)-----(+647)*(-662)-----(-480)*(+408)-----(+113)*(-95)-----(-8)* \\
 [-138] \quad [ +45] \quad [ +72] \quad [ -18] \quad [ +8] \\
 \\ 
 [-63] \quad [ +6] \quad [ +34] \quad [ -8] \quad [ +3] \\
 *(+49)-----(+16)*(-19)-----(-20)*(-10)-----(+1)*(+5)-----(-2)* \\
 [+14] \quad [ -3] \quad [ -4] \quad [ +2] \quad [ -1] \\
 \\ 
 [+7] \quad [ -1] \quad [ -2] \quad [ +1] \quad [ -1] \\
 \hline
 \end{array}$$

2 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{array}{cccccc}
 *(-34) & ----- & (-404)*(+483) & ----- & (+742)*(-742) & ----- & (-483)*(+404) & ----- & (+34)* \\
 [-34] & & [-79] & & [-0] & & [+79] & & [-34] \\
 \\[-14] & & [-37] & & [-0] & & [+37] & & [-14] \\
 *(-9) & ----- & (+11)*(+21) & ----- & (+10)*(-10) & ----- & (-21)*(-11) & ----- & (+9)* \\
 [-5] & & [-5] & & [+0] & & [-5] & & [+5] \\
 [-2] & & [-3] & & [+0] & & [-3] & & [+2] \\
 \hline & & \hline & & \hline & & \hline & & \hline
 \end{array}$$

### SİSTEMLER GEOMETRİK ÖZELLİKLERİ

$$\begin{array}{ccccc}
 /- & *---(1.38k) & ---*(1.38k) & ---*(1.38k) & ---*(1.38k) \\
 | & 0.22k & 0.22k & 0.22k & 0.22k \\
 /- & *---(1.38k) & ---*(1.38k) & ---*(1.38k) & ---*(1.38k) \\
 | & 0.34k & 0.34k & 0.34k & 0.34k \\
 /- & *---(1.38k) & ---*(1.38k) & ---*(1.38k) & ---*(1.38k) \\
 | & 0.51k & 0.51k & 0.51k & 0.51k \\
 /- & --- & --- & --- & --- \\
 /- & L & ---/--- L & ---/--- L & ---/--- L & ---/-
 \end{array}$$

1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccccc}
 *(-150) & ----- & (-343)*(+272) & ----- & (+81)*(-65) & ----- & (-18)*(+15) & ----- & (+1)* \\
 [+150] & & [+71] & & [-16] & & [+4] & & [-1] \\
 \\ [+136] & & [+70] & & [-15] & & [+3] & & [-1] \\
 *(-328) & ----- & (-443)*(+265) & ----- & (+89)*(-53) & ----- & (-17)*(+10) & ----- & (+2)* \\
 [+191] & & [+108] & & [-21] & & [+4] & & [-1] \\
 \\ [+187] & & [+107] & & [-21] & & [+4] & & [-1] \\
 *(-368) & ----- & (-470)*(+258) & ----- & (+89)*(-48) & ----- & (-17)*(+9) & ----- & (+2)* \\
 [+181] & & [+105] & & [-20] & & [+4] & & [-1] \\
 \\ [+91] & & [+53] & & [-10] & & [+2] & & [-1] \\
 \hline & & \hline & & \hline & & \hline & & \hline
 \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

\*{+184}-----{+662}\*{(-680)}-----{-499}\*{(+398)}-----{(+114)\*{(-98)}-----{(-9)\*  
[-184] [ +18] [ +101] [ -24] [ +9]  
[-166] [ +14] [ +96] [ -21] [ +7]  
\*{(+394)}-----{+730}\*{(-761)}-----{-589}\*{(+358)}-----{(+116)\*{(-67)}-----{(-16)\*  
[-228] [ +16] [ +142] [ -28] [ +8]  
[-222] [ +15] [ +148] [ -27] [ +8]  
\*{(+438)}-----{+748}\*{(-777)}-----{-611}\*{(+334)}-----{(+114)\*{(-61)}-----{(-15)\*  
[-215] [ +14] [ +137] [ -26] [ +7]  
[-108] [ +7] [ +68] [ -13] [ +4]  
--- --- --- --- ---

1 .inci kat 3 .inci kolonun çökmesi hali

\*{(-42)}-----{-394}\*{(+503)}-----{+752}\*{(-752)}-----{-503}\*{(+394)}-----{(+42)\*  
[ +42] [ -109] [ +0] [ +109] [ -42]  
[ +35] [ -102] [ -0] [ +102] [ -35]  
\*{(-88)}-----{-344}\*{(+594)}-----{+797}\*{(-797)}-----{-594}\*{(+344)}-----{(+88)\*  
[ +44] [ -148] [ -0] [ +148] [ -44]  
[ +42] [ -145] [ +0] [ +145] [ -42]  
\*{(-83)}-----{-329}\*{(+616)}-----{+808}\*{(-808)}-----{-616}\*{(+329)}-----{(+83)\*  
[ +40] [ -142] [ +0] [ +142] [ -40]  
[ +20] [ -71] [ +0] [ +71] [ -20]  
--- --- --- --- ---

2 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{cccccc} *{-153} & ----- & {-344} & *{+273} & ----- & {+81} & *{-65} & ----- & {-18} & *{+15} & ----- & {+2} & * \\ \hline [ +153] & & [ +72] & & [ -16] & & [ +4] & & [ -2] & & & & \\ [ +143] & & [ +71] & & [ -16] & & [ +4] & & [ -1] & & & & \\ & & *{-279} & ----- & {-414} & *{+269} & ----- & {+87} & *{-56} & ----- & {-18} & *{+11} & ----- & {+2} \\ \hline [ +136] & & [ +74] & & [ -15] & & [ +3] & & [ -1] & & & & \\ [ +68] & & [ +36] & & [ -7] & & [ +1] & & [ -8] & & & & \\ & & *{-45} & ----- & {-28} & *{-5} & ----- & {+1} & *{+4} & ----- & {+1} & *{-1} & ----- & {+8} \\ \hline [ -15] & & [ -3] & & [ +2] & & [ -1] & & [ +8] & & & & \\ [ -8] & & [ -1] & & [ +1] & & [ -8] & & [ +8] & & & & \\ \hline \end{array}$$

2 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccccc} *{+188} & ----- & {+663} & *{-681} & ----- & {-500} & *{+397} & ----- & {+114} & *{-89} & ----- & {-10} & * \\ \hline [ -188] & & [ +19] & & [ +103] & & [ -25] & & [ +10] & & & & \\ [ -175] & & [ +16] & & [ +99] & & [ -23] & & [ +8] & & & & \\ & & *{+339} & ----- & {-711} & *{-740} & ----- & {-563} & *{+365} & ----- & {+117} & *{-73} & ----- & {-15} \\ \hline [ -164] & & [ +13] & & [ +99] & & [ -21] & & [ +7] & & & & \\ [ -72] & & [ +5] & & [ +46] & & [ -9] & & [ +2] & & & & \\ & & *{+51} & ----- & {-18} & *{-19} & ----- & {-24} & *{-15} & ----- & {-1} & *{+6} & ----- & {-1} \\ \hline [ +21] & & [ -4] & & [ -7] & & [ +3] & & [ -2] & & & & \\ [ +10] & & [ -2] & & [ -4] & & [ +2] & & [ -1] & & & & \\ \hline \end{array}$$

2 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{cccccc} *(-43) & \cdots & (-393)*(+504) & \cdots & (+752)*(-752) & \cdots & (-504)*(+393) & \cdots & (+43)* \\ [-+43] & & [-111] & & [+0] & \cdots & [+111] & & [-43] \\ [-+38] & & [-106] & & [-0] & & [+106] & & [-38] \\ *(-72) & \cdots & (-359)*(+569) & \cdots & (+785)*(-785) & \cdots & (-569)*(+359) & \cdots & (+72)* \\ [-+33] & & [-104] & & [-0] & & [+104] & & [-33] \\ [-+13] & & [-48] & & [-0] & & [+48] & & [-13] \\ *(-6) & \cdots & (+15)*(+24) & \cdots & (+12)*(-12) & \cdots & (-24)*(-15) & \cdots & (+6)* \\ [--7] & & [-9] & & [-0] & & [-9] & & [+7] \\ [--3] & & [-4] & & [-0] & & [-4] & & [+3] \\ \hline & & \hline & & \hline & & \hline & & \hline \end{array}$$

3 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccccc} *(-111) & \cdots & (-322)*(+273) & \cdots & (+79)*(-67) & \cdots & (-19)*(+16) & \cdots & (+1)* \\ [+111] & & [+49] & & [-12] & & [+3] & & [-1] \\ [-+51] & & [-24] & & [-5] & & [+1] & & [-1] \\ *(-41) & \cdots & (-23)*(-1) & \cdots & (+2)*(+3) & \cdots & (+0)*(-1) & \cdots & (+0)* \\ [--10] & & [-1] & & [+1] & & [-0] & & [+0] \\ [--4] & & [-0] & & [+0] & & [-0] & & [+0] \\ *(+3) & \cdots & (+1)*(-1) & \cdots & (-0)*(-0) & \cdots & (+0)*(+0) & \cdots & (-0)* \\ [-+1] & & [-0] & & [-0] & & [+0] & & [-0] \\ [-+1] & & [-0] & & [-0] & & [+0] & & [-0] \\ \hline & & \hline & & \hline & & \hline & & \hline \end{array}$$

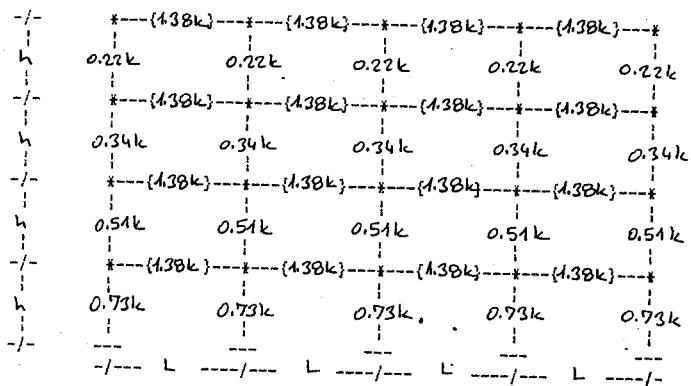
3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *{+138} & ----- & {+647}*{(-662)} & ----- & {-480}*{(+408)} & ----- & {+113}*{(-95)} & ----- & {-8}* \\ [-138] & & [ +15] & & [ +72] & & [ -18] & & [ +8] \\ [-63] & & [ +6] & & [ +34] & & [ -8] & & [ +3] \\ *{+50} & ----- & {+16}*{(-19)} & ----- & {-20}*{(-10)} & ----- & {+13}*{(+5)} & ----- & {-2}* \\ [+13] & & [ -31] & & [ -4] & & [ +2] & & [ -1] \\ [+6] & & [ -1] & & [ -2] & & [ +1] & & [ -1] \\ *{(-4)} & ----- & {(-1)}*{(+2)} & ----- & {+1}*{(+0)} & ----- & {-8}*{(-8)} & ----- & {+0}* \\ [-2] & & [ +1] & & [ +0] & & [ -0] & & [ +0] \\ [-1] & & [ +0] & & [ +0] & & [ -0] & & [ +0] \\ \hline \end{array}$$

3 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *{(-34)} & ----- & {-404}*{(+483)} & ----- & {+742}*{(-742)} & ----- & {-483}*{(+404)} & ----- & {+34}* \\ [+34] & & [ -79] & & [ +0] & & [ +79] & & [ -34] \\ [+14] & & [ -37] & & [ +0] & & [ +37] & & [ -14] \\ *{(-18)} & ----- & {+11}*{(+21)} & ----- & {+11}*{(-11)} & ----- & {-21}*{(-11)} & ----- & {+10}* \\ [-5] & & [ +5] & & [ -0] & & [ -5] & & [ +5] \\ [-2] & & [ +2] & & [ -0] & & [ -2] & & [ +2] \\ *{(+1)} & ----- & {(-0)}*{(-1)} & ----- & {(-1)}*{(+1)} & ----- & {+1}*{(+0)} & ----- & {(-1)}* \\ [+1] & & [ -1] & & [ +0] & & [ +1] & & [ -1] \\ [+0] & & [ -0] & & [ +0] & & [ +0] & & [ -0] \\ \hline \end{array}$$

SİSTEMLER GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) * (-343) * (+272) * (+81) * (-65) * (-18) * (+15) * (+1) * \\
 [ +150] & \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 [ +137] & \quad [ +78] \quad [ -15] \quad [ +3] \quad [ -1] \\
 & *(-324) * (-441) * (+265) * (+88) * (-53) * (-17) * (+10) * (+2) * \\
 [ +187] & \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \\
 [ +176] & \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \\
 & *(-418) * (-584) * (+249) * (+89) * (-44) * (-15) * (+7) * (+2) * \\
 [ +242] & \quad [ +158] \quad [ -26] \quad [ +4] \quad [ -1] \\
 [ +236] & \quad [ +148] \quad [ -25] \quad [ +4] \quad [ -1] \\
 & *(-454) * (-529) * (+242) * (+88) * (-40) * (-15) * (+6) * (+2) * \\
 [ +218] & \quad [ +139] \quad [ -23] \quad [ +4] \quad [ -1] \\
 [ +109] & \quad [ +70] \quad [ -12] \quad [ +2] \quad [ -0]
 \end{aligned}$$

$$\begin{aligned}
 & *(+184)*(-662)*(-680)*(-499)*(+398)*(+114)*(-98)*(-9)* \\
 [-184] & \quad [ +18] \quad [ +101] \quad [ -24] \quad [ +9] \\
 [-166] & \quad [ +14] \quad [ +96] \quad [ -21] \quad [ +7] \\
 & *(+389)*(+729)*(-759)*(-587)*(+351)*(+116)*(-67)*(-15)* \\
 [-222] & \quad [ +15] \quad [ +140] \quad [ -27] \quad [ +8] \\
 [-209] & \quad [ +13] \quad [ +134] \quad [ -25] \quad [ +7] \\
 & *(+492)*(+768)*(-797)*(-639)*(+316)*(+112)*(-54)*(-15)* \\
 [-283] & \quad [ +16] \quad [ +189] \quad [ -33] \quad [ +8] \\
 [-276] & \quad [ +15] \quad [ +186] \quad [ -32] \quad [ +8] \\
 & *(+538)*(+784)*(-811)*(-659)*(+301)*(+109)*(-48)*(-15)* \\
 [-254] & \quad [ +13] \quad [ +173] \quad [ -29] \quad [ +7] \\
 [-127] & \quad [ +7] \quad [ +87] \quad [ -14] \quad [ +3] \\
 \end{aligned}$$

$$\begin{aligned}
 & *(-42)*(-394)*(+503)*(+752)*(-752)*(-503)*(+394)*(+42)* \\
 [+42] & \quad [ -109] \quad [ +0] \quad [ +109] \quad [ -42] \\
 [+36] & \quad [ -102] \quad [ +0] \quad [ +102] \quad [ -36] \\
 & *(-78)*(-345)*(+593)*(+796)*(-796)*(-593)*(+345)*(+78)* \\
 [+42] & \quad [ -145] \quad [ +0] \quad [ +145] \quad [ -42] \\
 [+38] & \quad [ -139] \quad [ -0] \quad [ +139] \quad [ -38] \\
 & *(-87)*(-311)*(+644)*(+822)*(-822)*(-644)*(+311)*(+87)* \\
 [+49] & \quad [ -194] \quad [ -0] \quad [ +194] \quad [ -49] \\
 [+46] & \quad [ -190] \quad [ -03] \quad [ +190] \quad [ -46] \\
 & *(-88)*(-296)*(+664)*(+832)*(-832)*(-664)*(+296)*(+88)* \\
 [+42] & \quad [ -177] \quad [ -03] \quad [ +177] \quad [ -42] \\
 [+21] & \quad [ -89] \quad [ -0] \quad [ +89] \quad [ -21] \\
 \end{aligned}$$

2 .inci kat 1 .inci kolonun çökmesi hali

$*(-150) - (-343)*(+272) - (+81)*(-65) - (-18)*(+15) - (+1)*$				
[ +150]	[ +71]	[ -16]	[ +4]	[ -1]
[ +136]	[ +70]	[ -15]	[ +3]	[ -1]
$*(-328) - (-443)*(+265) - (+89)*(-53) - (-17)*(+10) - (+2)*$				
[ +192]	[ +108]	[ -21]	[ +4]	[ -1]
[ +188]	[ +107]	[ -21]	[ +4]	[ -1]
$*(-363) - (-468)*(+258) - (+88)*(-49) - (-17)*(+9) - (+2)*$				
[ +175]	[ +103]	[ -19]	[ +4]	[ -1]
[ +75]	[ +48]	[ -8]	[ +1]	[ -0]
$*(-51) - (-34)*(-8) - (+0)*(+5) - (+1)*(-1) - (-0)*$				
[ -24]	[ -6]	[ +3]	[ -1]	[ +0]
[ -12]	[ -3]	[ +2]	[ -0]	[ +0]
---	---	---	---	---

2 .inci kat 2 .inci kolonun çökmesi hali

$*(+184) - (+662)*(-680) - (-499)*(+398) - (+114)*(-90) - (-9)*$				
[ -184]	[ +181]	[ +101]	[ -24]	[ +9]
[ -166]	[ +14]	[ +96]	[ -21]	[ +7]
$*(+394) - (+731)*(-761) - (-589)*(+358) - (+116)*(-67) - (-16)*$				
[ -229]	[ +16]	[ +143]	[ -28]	[ +8]
[ -224]	[ +15]	[ +140]	[ -28]	[ +8]
$*(+431) - (+746)*(-774) - (-689)*(+335) - (+114)*(-61) - (-15)*$				
[ -207]	[ +13]	[ +133]	[ -25]	[ +7]
[ -87]	[ +4]	[ +68]	[ -18]	[ +2]
$*(+55) - (+21)*(-21) - (-28)*(-19) - (-2)*(+7) - (+0)*$				
[ +32]	[ -5]	[ -13]	[ +5]	[ -2]
[ +16]	[ -2]	[ -6]	[ +3]	[ -1]
---	---	---	---	---

2 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{array}{ccccc}
 *(-42) & -(-394)*(+503) & -(+752)*(-752) & -(-503)*(+394) & (+42)* \\
 [-42] & [-109] & [0] & [+109] & [-42] \\
 \\ 
 [+35] & [-102] & [0] & [+102] & [-35] \\
 *(-80) & -(-344)*(+595) & -(+797)*(-797) & -(-595)*(+344) & (+80)* \\
 [+44] & [-148] & [0] & [+148] & [-44] \\
 \\ 
 [+43] & [-146] & [0] & [+146] & [-43] \\
 *(-81) & -(-330)*(+614) & -(+807)*(-807) & -(-614)*(+330) & (+81)* \\
 [+38] & [-138] & [0] & [+138] & [-38] \\
 \\ 
 [+14] & [-61] & [0] & [+61] & [-14] \\
 *(-4) & -(+19)*(+28) & -(+14)*(-14) & -(-28)*(-19) & (+4)* \\
 [-10] & [+15] & [0] & [-15] & [+10] \\
 \\ 
 [-5] & [7] & [0] & [-7] & [5] \\
 \hline
 \end{array}$$

3 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{array}{ccccc}
 *(-153) & -(-344)*(+273) & -(+81)*(-65) & -(-10)*(+15) & (+23)* \\
 [+153] & [+72] & [-16] & [+41] & [-2] \\
 \\ 
 [+143] & [+71] & [-16] & [+41] & [-1] \\
 *(-279) & -(-414)*(+269) & -(+87)*(-56) & -(-18)*(+11) & (+2)* \\
 [+136] & [+74] & [-15] & [+3] & [-1] \\
 \\ 
 [+60] & [+36] & [-7] & [+1] & [-8] \\
 *(-46) & -(-28)*(-5) & -(+1)*(+4) & -(+1)*(-1) & (+8)* \\
 [-15] & [-3] & [2] & [-1] & [+8] \\
 \\ 
 [-6] & [-11] & [1] & [-1] & [+8] \\
 *(+4) & -(+2)*(-8) & -(0)*(-0) & -(+0)*(+0) & (-0)* \\
 [+2] & [-8] & [0] & [+0] & [-8] \\
 \\ 
 [+1] & [-8] & [0] & [+0] & [-8] \\
 \hline
 \end{array}$$

3 .inci kat 2 .inci kolonun çökmesi hali

$*(+188) - (+663)*(-681) - (-500)*(+397) - (+114)*(-89) - (-10)*$   
[ -188] [ +19] [ +103] [ -25] [ +10]  
  
[ -175] [ +16] [ +99] [ -23] [ +8]  
 $*(+339) - (+711)*(-740) - (-563)*(+365) - (+117)*(-73) - (-15)*$   
[ -164] [ +13] [ +99] [ -21] [ +7]  
  
[ -71] [ +4] [ +46] [ -9] [ +2]  
 $*(+52) - (+18)*(-19) - (-24)*(-15) - (-1)*(+6) - (-1)*$   
[ +20] [ -3] [ -7] [ +3] [ -2]  
  
[ +8] [ -1] [ -3] [ +1] [ -1]  
 $*(-5) - (-1)*(+2) - (+2)*(+1) - (-8)*(-1) - (-1)*(+0)*$   
[ -3] [ +1] [ +1] [ -8] [ +0]  
  
[ -2] [ +0] [ +0] [ -8] [ +0]  
---

3 .inci kat 3 .inci kolonun çökmesi hali

$*(-43) - (-393)*(+504) - (+752)*(-752) - (-504)*(+393) - (+43)*$   
[ +43] [ -111] [ +0] [ +111] [ -43]  
  
[ +38] [ -106] [ +0] [ +106] [ -38]  
 $*(-72) - (-359)*(+569) - (+785)*(-785) - (-569)*(+359) - (+72)*$   
[ +33] [ -104] [ +0] [ +104] [ -33]  
  
[ +13] [ -47] [ +0] [ +47] [ -13]  
 $*(-7) - (+15)*(+24) - (+12)*(-12) - (-24)*(-15) - (+7)*$   
[ -7] [ +9] [ +0] [ -9] [ +7]  
  
[ -3] [ +4] [ +0] [ -4] [ +3]  
 $*(+1) - (-1)*(-2) - (-1)*(+1) - (+2)*(+1) - (-1)*$   
[ +1] [ -1] [ -0] [ +1] [ -1]  
  
[ +1] [ -1] [ -0] [ +1] [ -1]  
---

4 .inci kat 1 .inci kolonun çökmesi hali

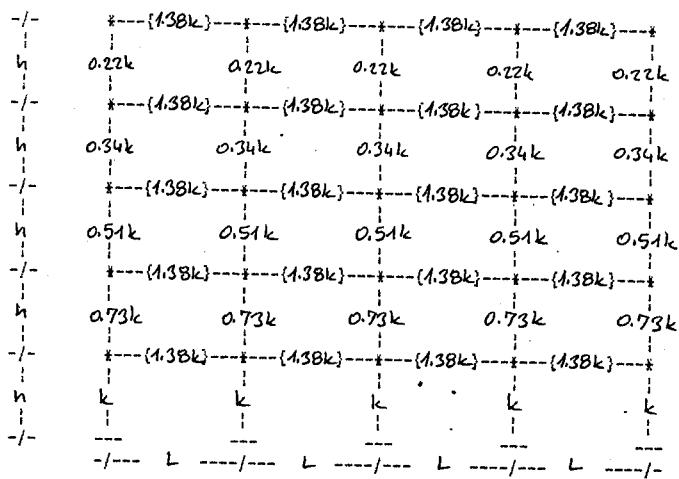
$$\begin{matrix} *{-111} & -322 & +273 & +79 & -67 & -19 & +16 & +1 & \\ \hline [+111] & [+49] & [-12] & [+3] & [-1] & & & \\ [-51] & [+24] & [-5] & [+1] & [-1] & & & \\ *[-41] & [-23] & [-1] & [+2] & [+3] & [+0] & [-1] & [+0] \\ [-10] & [-11] & [+1] & [-0] & [-0] & [+0] & [-0] & [+0] \\ [-4] & [-0] & [+0] & [-0] & [-0] & [+0] & [-0] & [+0] \\ *{+3} & {-1} & {-0} & {-0} & {-0} & {-0} & {-0} & {-0} \\ [+1] & [-0] & [-0] & [+0] & [-0] & & & \\ [+0] & [-0] & [-0] & [+0] & [-0] & & & \\ *{-0} & {-0} & [+0] & [-0] & [-0] & [-0] & [-0] & [+0] \\ [-0] & [+0] & [-0] & [-0] & [-0] & [+0] & [-0] & [+0] \\ [-0] & [-0] & [-0] & [-0] & [-0] & [-0] & [-0] & [-0] \\ \hline \end{matrix}$$

4 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{matrix} *{+138} & +647 & -662 & -480 & +400 & +113 & -95 & -0 & \\ \hline [-138] & [+15] & [+72] & [-18] & [+8] & & & \\ [-63] & [+6] & [+34] & [-8] & [+3] & & & \\ *{+50} & {-16} & {-19} & {-20} & {-10} & [+1] & [+5] & {-2} \\ [+13] & [-3] & [-4] & [+2] & [-1] & & & \\ [+6] & [-1] & [-2] & [+1] & [-1] & & & \\ *{-4} & {-1} & [+2] & [-0] & [-0] & [-0] & [-0] & [+0] \\ [-2] & [+0] & [+0] & [-0] & [+0] & & & \\ [-1] & [+0] & [+0] & [-0] & [-0] & & & \\ *{+0} & {-0} & {-0} & [+0] & [-0] & [-0] & [-0] & [+0] \\ [+0] & [-0] & [-0] & [-0] & [+0] & [-0] & [-0] & [-0] \\ \hline \end{matrix}$$

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *(-34) & -(-484)*(+483) & -(+742)*(-742) & -(-483)*(+484) & -(+34)* \\ [-34] & [-79] & [0] & [+79] & [-34] \\ [-14] & [-37] & [0] & [+37] & [-14] \\ *(-10) & -(+11)*(+21) & -(+11)*(-11) & -(-21)*(-11) & -(+10)* \\ [-5] & [+5] & [0] & [-5] & [+5] \\ [-2] & [+2] & [0] & [-2] & [+2] \\ *(+1) & -(-0)*(-1) & -(-1)*(+1) & -(+1)*(+0) & -(-1)* \\ [-1] & [-0] & [0] & [+0] & [-1] \\ [0] & [-0] & [0] & [+0] & [-0] \\ *(-0) & -(+0)*(+0) & -(+0)*(-0) & -(-0)*(-0) & -(+0)* \\ [-0] & [+0] & [0] & [-0] & [+0] \\ [-0] & [+0] & [0] & [-0] & [+0] \\ \hline & \hline & \hline & \hline & \hline \end{array}$$



1 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *{-150} *{-343} *{+272} *{+81} *{-65} *{-18} *{+15} *{+1} * \\
 & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 & [ +137] \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \\
 & *{-324} *{-442} *{+265} *{+88} *{-53} *{-17} *{+10} *{+2} * \\
 & [ +187] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \\
 & [ +177] \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \\
 & *{-413} *{-501} *{+249} *{+88} *{-44} *{-16} *{+8} *{+2} * \\
 & [ +235] \quad [ +147] \quad [ -25] \quad [ +4] \quad [ -1] \\
 & [ +220] \quad [ +143] \quad [ -23] \quad [ +4] \quad [ -1] \\
 & *{-507} *{-567} *{+230} *{+87} *{-35} *{-13} *{+5} *{+2} * \\
 & [ +286] \quad [ +194] \quad [ -29] \quad [ +4] \quad [ -1] \\
 & [ +281] \quad [ +192] \quad [ -28] \quad [ +4] \quad [ -1] \\
 & *{-532} *{-587} *{+222} *{+85} *{-32} *{-12} *{+5} *{+2} * \\
 & [ +252] \quad [ +173] \quad [ -25] \quad [ +4] \quad [ -1] \\
 & [ +126] \quad [ +87] \quad [ -12] \quad [ +2] \quad [ -1] \\
 & --- \quad --- \quad --- \quad --- \quad ---
 \end{aligned}$$

1 .inci kat 2 .inci kolonun çökmesi hali

\*(+184)-----{+662}\*{-600}-----{-499}\*{+398}-----{+114}\*{ -90}-----{ -9}\*  
[ -184] [ +18] [ +101] [ -24] [ +9]  
[ -166] [ +14] [ +96] [ -21] [ +7]  
\*{+389}-----{+729}\*{-759}-----{-587}\*{+350}-----{+116}\*{ -67}-----{ -15}\*  
[ -223] [ +15] [ +140] [ -27] [ +8]  
[ -210] [ +13] [ +135] [ -25] [ +7]  
\*{+485}-----{+766}\*{-795}-----{-636}\*{+317}-----{+111}\*{ -54}-----{ -15}\*  
[ -275] [ +15] [ +185] [ -32] [ +8]  
[ -255] [ +12] [ +176] [ -29] [ +7]  
\*{+584}-----{+806}\*{-831}-----{-690}\*{+279}-----{+105}\*{ -41}-----{ -14}\*  
[ -329] [ +14] [ +235] [ -35] [ +7]  
[ -322] [ +13] [ +231] [ -34] [ +7]  
\*{+610}-----{+817}\*{-841}-----{-705}\*{+266}-----{+102}\*{ -38}-----{ -13}\*  
[ -288] [ +11] [ +208] [ -30] [ +6]  
[ -144] [ +6] [ +104] [ -15] [ +3]  
---

1 .inci kat 3 .inci kolonun çökmesi hali

\*{ -42}-----{-394}\*{+503}-----{+752}\*{-752}-----{-503}\*{+394}-----{ +42}\*  
[ +42] [ -109] [ +0] [ +109] [ -42]  
[ +36] [ -102] [ +0] [ +102] [ -36]  
\*{ -78}-----{-345}\*{+593}-----{+796}\*{-796}-----{-593}\*{+345}-----{ +78}\*  
[ +43] [ -146] [ +0] [ +146] [ -43]  
[ +39] [ -140] [ +0] [ +140] [ -39]  
\*{ -85}-----{-312}\*{+641}-----{+821}\*{-821}-----{-641}\*{+312}-----{ +85}\*  
[ +47] [ -190] [ -0] [ +190] [ -47]  
[ +41] [ -180] [ +0] [ +180] [ -41]  
\*{ -90}-----{-275}\*{+693}-----{+847}\*{-847}-----{-693}\*{+275}-----{ +90}\*  
[ +49] [ -239] [ -0] [ +239] [ -49]  
[ +47] [ -235] [ -0] [ +235] [ -47]  
\*{ -88}-----{-263}\*{+708}-----{+854}\*{-854}-----{-708}\*{+263}-----{ +88}\*  
[ +41] [ -211] [ -0] [ +211] [ -41]  
[ +21] [ -105] [ -0] [ +105] [ -21]  
---

$$\begin{aligned}
 & *(-150)-----\{-343\}*(+272)-----\{ +81\}*\{ -65\}-----\{ -18\}*\{ +15\}-----\{ +1\}* \\
 [ +150] & \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 \\ 
 & *(-324)-----\{-441\}*(+265)-----\{ +88\}*\{ -53\}-----\{ -17\}*\{ +10\}-----\{ +2\}* \\
 [ +187] & \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \\
 \\ 
 & *(-419)-----\{-504\}*(+250)-----\{ +89\}*\{ -44\}-----\{ -16\}*\{ +7\}-----\{ +2\}* \\
 [ +243] & \quad [ +150] \quad [ -26] \quad [ +5] \quad [ -1] \\
 \\ 
 & *(-448)-----\{-526\}*(+242)-----\{ +88\}*\{ -41\}-----\{ -15\}*\{ +7\}-----\{ +2\}* \\
 [ +210] & \quad [ +135] \quad [ -22] \quad [ +4] \quad [ -1] \\
 \\ 
 & *(-54)-----\{ -38\}*\{ -12\}-----\{ -1\}*\{ +5\}-----\{ +13\}*\{ -1\}-----\{ -8\}* \\
 [ -33] & \quad [ -11] \quad [ +4] \quad [ -1] \quad [ +8] \\
 \\ 
 & [-17] \quad [ -6] \quad [ +2] \quad [ -1] \quad [ +0] \\
 \hline
 \end{aligned}$$

$$\begin{aligned}
 & *(+184)-----\{+662\}*\{-680\}-----\{-499\}*\{+398\}-----\{+114\}*\{ -90\}-----\{ -9\}* \\
 [ -184] & \quad [ +8] \quad [ +101] \quad [ -24] \quad [ +9] \\
 \\ 
 & *(+389)-----\{+729\}*\{-759\}-----\{-587\}*\{+351\}-----\{+116\}*\{ -67\}-----\{ -15\}* \\
 [ -166] & \quad [ +14] \quad [ +96] \quad [ -21] \quad [ +71] \\
 \\ 
 & *(+493)-----\{+768\}*\{-797\}-----\{-639\}*\{+315\}-----\{+112\}*\{ -54\}-----\{ -15\}* \\
 [ -222] & \quad [ +15] \quad [ +140] \quad [ -27] \quad [ +8] \\
 \\ 
 & *(+522)-----\{+781\}*\{-808\}-----\{-656\}*\{+302\}-----\{+109\}*\{ -49\}-----\{ -14\}* \\
 [ -208] & \quad [ +13] \quad [ +134] \quad [ -25] \quad [ +7] \\
 \\ 
 & *(+56)-----\{ +22\}*\{ -21\}-----\{ -31\}*\{ -23\}-----\{ -4\}*\{ +7\}-----\{ +1\}* \\
 [ -243] & \quad [ +12] \quad [ +167] \quad [ -27] \quad [ +6] \\
 \\ 
 & *(-98) \quad [ +3] \quad [ +73] \quad [ -10] \quad [ +2] \\
 \\ 
 & *(-43) \quad [ -5] \quad [ -20] \quad [ +7] \quad [ -3] \\
 \\ 
 & [+21] \quad [ -3] \quad [ -10] \quad [ +3] \quad [ -1] \\
 \hline
 \end{aligned}$$

$$\begin{aligned}
 & *(-42) - (-394)*(+503) - (+752)*(-752) - (-503)*(+394) - (+42)* \\
 & [ +42] \quad [-109] \quad [ +0] \quad [ +109] \quad [ -42] \\
 & [ +36] \quad [-102] \quad [ +0] \quad [ +102] \quad [ -36] \\
 & *(-78) - (-345)*(+592) - (+796)*(-796) - (-592)*(+345) - (+78)* \\
 & [ +42] \quad [-145] \quad [ +0] \quad [ +145] \quad [ -42] \\
 & [ +38] \quad [-139] \quad [ +0] \quad [ +139] \quad [ -38] \\
 & *(-87) - (-311)*(+644) - (+822)*(-822) - (-644)*(+311) - (+87)* \\
 & [ +49] \quad [-195] \quad [ -0] \quad [ +195] \quad [ -49] \\
 & [ +48] \quad [-192] \quad [ -0] \quad [ +192] \quad [ -48] \\
 & *(-87) - (-298)*(+661) - (+830)*(-830) - (-661)*(+298) - (+87)* \\
 & [ +39] \quad [-171] \quad [ +0] \quad [ +171] \quad [ -39] \\
 & [ +13] \quad [-74] \quad [ +0] \quad [ +74] \quad [ -13] \\
 & *(-1) - (+22)*(+30) - (+15)*(-15) - (-30)*(-22) - (+1)* \\
 & [ -12] \quad [ +22] \quad [ +0] \quad [ -22] \quad [ +12] \\
 & [ -6] \quad [ +11] \quad [ +0] \quad [ -11] \quad [ +6] \\
 & --- \quad --- \quad --- \quad --- \quad ---
 \end{aligned}$$

$$\begin{aligned}
 & *(-150) - (-343)*(+272) - (+81)*(-65) - (-18)*(+15) - (+1)* \\
 & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 & [ +136] \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \\
 & *(-328) - (-443)*(+265) - (+89)*(-53) - (-17)*(+10) - (+2)* \\
 & [ +192] \quad [ +108] \quad [ -21] \quad [ +4] \quad [ -1] \\
 & [ +188] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \\
 & *(-363) - (-468)*(+258) - (+88)*(-49) - (-17)*(+9) - (+2)* \\
 & [ +175] \quad [ +103] \quad [ -19] \quad [ +4] \quad [ -1] \\
 & [ +75] \quad [ +49] \quad [ -8] \quad [ +1] \quad [ -0] \\
 & *(-52) - (-34)*(-8) - (+0)*(+5) - (+1)*(-1) - (-0)* \\
 & [ -23] \quad [ -6] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & [ -9] \quad [ -3] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *(+5) - (+3)*(-0) - (-0)*(-0) - (-0)*(+0) - (-0)* \\
 & [ +4] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & [ +2] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & --- \quad --- \quad --- \quad --- \quad ---
 \end{aligned}$$

3 .inci kat 2 .inci kolonun cokmesi hali

-78-

```

+{+184}-----{+662}*{-680}-----{-499}*{+398}-----{+114}*{ -90}-----{ -9}*
[ -184]      [ +18]      [ +101]      [ -24]      [ +9]
[ -166]      [ +14]      [ +96]      [ -21]      [ +7]
*{+394}-----{+731}*{-761}-----{-589}*{+350}-----{+116}*{ -67}-----{ -16}*
[ -229]      [ +16]      [ +143]      [ -28]      [ +8]
[ -224]      [ +15]      [ +140]      [ -28]      [ +8]
*{+431}-----{+746}*{-774}-----{-609}*{+335}-----{+114}*{ -61}-----{ -15}*
[ -207]      [ +13]      [ +133]      [ -25]      [ +7]
[ -87]       [ +4]       [ +60]      [ -10]      [ +2]
*{ +56}-----{ +21}*{ -21}-----{ -29}*{ -19}-----{ -23}*{ +7}-----{ +0}*
[ +30]       [ -4]       [ -12]      [ +5]       [ -2]
[ +12]       [ -2]       [ -5]       [ +2]       [ -1]
*{ -7}-----{ -23}*{ +3}-----{ +3}*{ +1}-----{ -0}*{ -1}-----{ +0}*
[ -5]        [ +1]       [ +1]       [ -1]       [ +1]
[ -3]        [ +1]       [ +1]       [ -0]       [ +0]
---
```

3 .inci kat 3 .inci kolonun çökmesi hali

```

*{ -42}-----{-394}*{+503}-----{+752}*{-752}-----{-503}*{+394}-----{ +42}*
[ +42]           [ -109]           [ +0]           [ +109]           [ -42]
[ +35]           [ -102]           [ +0]           [ +102]           [ -35]
*{ -80}-----{-344}*{+595}-----{+797}*{-797}-----{-595}*{+344}-----{ +80}*
[ +44]           [ -148]           [ +0]           [ +148]           [ -44]
[ +43]           [ -146]           [ +0]           [ +146]           [ -43]
*{ -81}-----{-330}*{+614}-----{+807}*{-807}-----{-614}*{+330}-----{ +81}*
[ +38]           [ -138]           [ -0]           [ +138]           [ -38]
[ +14]           [ -61]           [ -0]           [ +61]           [ -14]
*{ -5}-----{ +19}*{+28}-----{+14}*{-14}-----{ -28}*{ -19}-----{ +5}*
[ -9]            [ +14]           [ -0]           [ -14]           [ +9]
[ -3]            [ +6]            [ -0]           [ -6]           [ +3]
*{ +1}-----{ -1}*{ -3}-----{ -1}*{ +1}-----{ +3}*{ +1}-----{ -1}*
[ +2]            [ -2]           [ -0]           [ +2]           [ -2]
[ +1]            [ -1]           [ -0]           [ +1]           [ -1]

```

$$\begin{aligned}
 & *(-153) - (-344)*(+273) - (-81)*(-65) - (-18)*(+15) - (+2)* \\
 & [ +153] \quad [ +72] \quad [ -16] \quad [ +4] \quad [ -2] \\
 & [ +143] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 & \quad *(-279) - (-414)*(+269) - (+87)*(-56) - (-18)*(+11) - (+2)* \\
 & [ +136] \quad [ +74] \quad [ -15] \quad [ +3] \quad [ -1] \\
 & [ +60] \quad [ +36] \quad [ -7] \quad [ +1] \quad [ -8] \\
 & \quad *(-46) - (-28)*(-5) - (+1)*(+4) - (+1)*(-1) - (+8)* \\
 & [ -15] \quad [ -3] \quad [ +2] \quad [ -1] \quad [ +8] \\
 & [ -6] \quad [ -1] \quad [ +1] \quad [ -8] \quad [ +8] \\
 & \quad *(+4) - (+2)*(-8) - (-8)*(-8) - (+8)*(+8) - (-8)* \\
 & [ +2] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & [ +1] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & \quad *(-8) - (-8)*(+8) - (+8)*(+8) - (-8)*(-8) - (+8)* \\
 & [ -8] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & [ -8] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots
 \end{aligned}$$

$$\begin{aligned}
 & *(+188) - (+663)*(-681) - (-500)*(+397) - (+114)*(-89) - (-10)* \\
 & [ -188] \quad [ +19] \quad [ +103] \quad [ -25] \quad [ +10] \\
 & [ -175] \quad [ +16] \quad [ +99] \quad [ -23] \quad [ +8] \\
 & \quad *(+339) - (+711)*(-740) - (-563)*(+365) - (+117)*(-73) - (-15)* \\
 & [ -164] \quad [ +13] \quad [ +99] \quad [ -21] \quad [ +7] \\
 & [ -71] \quad [ +4] \quad [ +46] \quad [ -9] \quad [ +2] \\
 & \quad *(+523) - (+18)*(-20) - (-24)*(-15) - (-1)*(+6) - (-1)* \\
 & [ +28] \quad [ -3] \quad [ -7] \quad [ +3] \quad [ -2] \\
 & [ +8] \quad [ -1] \quad [ -3] \quad [ +1] \quad [ -1] \\
 & \quad *(-5) - (-2)*(+2) - (+2)*(+1) - (-8)*(-1) - (+8)* \\
 & [ -3] \quad [ +1] \quad [ +1] \quad [ -8] \quad [ +8] \\
 & [ -1] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & \quad *(+1) - (+8)*(-8) - (-8)*(-8) - (+8)*(+8) - (-8)* \\
 & [ +1] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & [ +8] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots
 \end{aligned}$$

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-43)-----(-393)*(+504)-----(+752)+(-752)-----(-504)*(+393)-----(+43)* \\
 [ +43] & \quad [ -111] \quad [ +0] \quad [ +111] \quad [ -43] \\
 [ +38] & \quad [ -106] \quad [ +0] \quad [ +106] \quad [ -38] \\
 & *(-72)-----(-359)*(+569)-----(+785)*(-785)-----(-569)*(+359)-----(+72)* \\
 [ +33] & \quad [ -104] \quad [ +0] \quad [ +104] \quad [ -33] \\
 [ +13] & \quad [ -47] \quad [ +0] \quad [ +47] \quad [ -13] \\
 & *(-7)-----(+15)*(+24)-----(+12)*(-12)-----(-24)*(-15)-----(+7)* \\
 [ -6] & \quad [ +9] \quad [ -0] \quad [ -9] \quad [ +6] \\
 [ -3] & \quad [ +4] \quad [ -0] \quad [ -4] \quad [ +3] \\
 & *(+1)-----(-1)*(-2)-----(+1)*(+1)-----(+2)*(+1)-----(-1)* \\
 [ +1] & \quad [ -1] \quad [ +0] \quad [ +1] \quad [ -1] \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\
 & *(-0)-----(+0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)* \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 \hline
 \end{aligned}$$

5 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-111)-----(-322)*(+273)-----(+79)*(-67)-----(-19)*(+16)-----(+1)* \\
 [ +111] & \quad [ +49] \quad [ -12] \quad [ +3] \quad [ -1] \\
 [ +51] & \quad [ +24] \quad [ -5] \quad [ +1] \quad [ -1] \\
 & *(-41)-----(-23)*(-1)-----(+2)*(+3)-----(+0)*(-1)-----(+0)* \\
 [ -10] & \quad [ -1] \quad [ +1] \quad [ -0] \quad [ +0] \\
 [ -4] & \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & *(+3)-----(+1)*(-1)-----(+0)*(-0)-----(+0)*(+0)-----(-0)* \\
 [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *(-0)-----(-0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)* \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 & *(+0)-----(+0)*(-0)-----(+0)*(+0)-----(+0)*(-0)-----(-0)* \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\
 \hline
 \end{aligned}$$

```

* (+138)-----(+647)*(-662)-----(-480)*(+408)-----(+113)*(-95)-----(-8)*
[ -138]      [ +15]      [ +72]      [ -18]      [ +8]
[ -63]      [ +6]      [ +34]      [ -8]      [ -3]
* (+50)-----(+16)*(-19)-----(-20)*(-10)-----(+1)*(+5)-----(-2)*
[ +13]      [ -3]      [ -4]      [ +2]      [ -1]
[ +6]      [ -1]      [ -2]      [ +1]      [ -1]
* (-4)-----(-1)*(+2)-----(+1)*(+0)-----(-0)*(-0)-----(+0)*
[ -2]      [ +0]      [ +0]      [ -0]      [ +0]
[ -1]      [ +0]      [ +0]      [ -0]      [ +0]
* (+0)-----(+0)*(-0)-----(-0)*(+0)-----(+0)*(+0)-----(-0)*
[ +0]      [ -0]      [ -0]      [ +0]      [ -0]
[ +0]      [ -0]      [ -0]      [ +0]      [ -0]
* (-0)-----(-0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)*
[ -0]      [ +0]      [ -0]      [ -0]      [ +0]
[ -0]      [ +0]      [ -0]      [ -0]      [ +0]

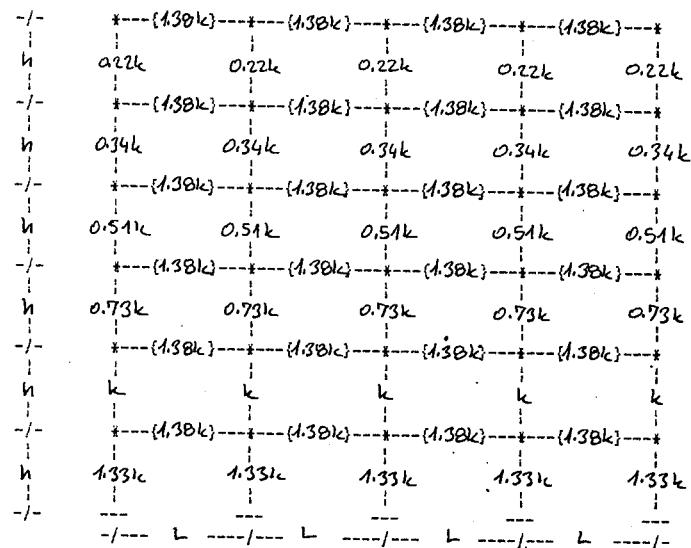
```

5 .inci kat 3 .inci kolonun cokmesi hali

```

*{ -34}----{-404}*{+483}----{+742}*{-742}----{-483}*{+404}----{ +34}*
[ +34]      [ -79]      [ +0]      [ +79]      [ -34]
[ +14]      [ -37]      [ +0]      [ +37]      [ -14]
*{ -10}----{ +11}*{ +21}----{ +11}*{ -11}----{ -21}*{ -11}----{ +10}*
[ -5]      [ +5]      [ -0]      [ -5]      [ +5]
[ -2]      [ +2]      [ -0]      [ -2]      [ +2]
*{ +1}----{ -0}*{ -1}----{ -1}*{ +1}----{ +1}*{ +0}----{ -1}*
[ +1]      [ -0]      [ +0]      [ +0]      [ -1]
[ +0]      [ -0]      [ +0]      [ +0]      [ -0]
*{ -0}----{ +0}*{ +0}----{ +0}*{ -0}----{ -0}*{ -0}----{ +0}*
[ -0]      [ +0]      [ -0]      [ -0]      [ +0]
[ -0]      [ +0]      [ -0]      [ -0]      [ +0]
*{ +0}----{ +0}*{ -0}----{ -0}*{ +0}----{ +0}*{ -0}----{ -0}*
[ +0]      [ -0]      [ +0]      [ +0]      [ -0]
[ +0]      [ -0]      [ +0]      [ +0]      [ -0]

```



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-150) - (-343)*(+272) - (+81)*(-65) - (-18)*(+15) - (+1)* \\
 & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \\
 & [ +137] \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \\
 & \quad *(-324) - (-442)*(+265) - (+88)*(-53) - (-17)*(+10) - (+2)* \\
 & [ +187] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \\
 & [ +177] \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \\
 & \quad *(-413) - (-501)*(+249) - (+88)*(-44) - (-16)*(+8) - (+2)* \\
 & [ +236] \quad [ +148] \quad [ -25] \quad [ +4] \quad [ -1] \\
 & [ +222] \quad [ +143] \quad [ -23] \quad [ +4] \quad [ -1] \\
 & \quad *(-500) - (-563)*(+230) - (+86)*(-35) - (-13)*(+5) - (+2)* \\
 & [ +278] \quad [ +190] \quad [ -28] \quad [ +4] \quad [ -1] \\
 & [ +259] \quad [ +182] \quad [ -25] \quad [ +3] \quad [ -1] \\
 & \quad *(-585) - (-627)*(+207) - (+82)*(-27) - (-11)*(+3) - (+1)* \\
 & [ +326] \quad [ +237] \quad [ -30] \quad [ +4] \quad [ -1] \\
 & [ +321] \quad [ +235] \quad [ -30] \quad [ +4] \quad [ -1] \\
 & \quad *(-602) - (-641)*(+200) - (+80)*(-25) - (-10)*(+3) - (+1)* \\
 & [ +281] \quad [ +206] \quad [ -26] \quad [ +3] \quad [ -1] \\
 & [ +148] \quad [ +183] \quad [ -13] \quad [ +2] \quad [ -0]
 \end{aligned}$$

1 .inci kat 2 .inci kolonun cokmesi hali

$*\{+184\} - \{-662\} * \{-680\} - \{-499\} * \{+398\} - \{+114\} * \{-90\} - \{-9\} *$				
[ -184]	[ +18]	[ +101]	[ -24]	[ +9]
$*\{+389\} - \{+729\} * \{-759\} - \{-587\} * \{+350\} - \{+116\} * \{-67\} - \{-15\} *$				
[ -223]	[ +15]	[ +140]	[ -27]	[ +8]
$*\{+486\} - \{+766\} * \{-795\} - \{-637\} * \{+317\} - \{+111\} * \{-54\} - \{-15\} *$				
[ -276]	[ +15]	[ +185]	[ -32]	[ +8]
$*\{+577\} - \{+803\} * \{-829\} - \{-686\} * \{+281\} - \{+105\} * \{-42\} - \{-14\} *$				
[ -319]	[ +13]	[ +229]	[ -34]	[ +7]
$*\{+662\} - \{+839\} * \{-860\} - \{-736\} * \{+242\} - \{+96\} * \{-31\} - \{-11\} *$				
[ -367]	[ +11]	[ +277]	[ -35]	[ +6]
$*\{+677\} - \{+846\} * \{-866\} - \{-746\} * \{+233\} - \{+93\} * \{-29\} - \{-11\} *$				
[ -316]	[ +9]	[ +240]	[ -30]	[ +5]
$*\{-158\}$	[ +5]	[ +120]	[ -15]	[ +2]
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2 .inci kat 1 .inci kolonun cokmesi hali

$\star(-150) \cdots (-343) \cdot (+272) \cdots (+81) \cdot (-65) \cdots (-18) \cdot (+15) \cdots (+1) \cdot$					
[ +150]	[ +71]	[ -16]	[ +4]	[ -1]	
$\star(+137) \cdots (+70) \cdots (-15) \cdots (+3) \cdots (-1)$					
$\star(-324) \cdots (-442) \cdot (+265) \cdots (+88) \cdot (-53) \cdots (-17) \cdot (+10) \cdots (+2) \cdot$					
[ +187]	[ +107]	[ -21]	[ +4]	[ -1]	
$\star(+177) \cdots (+104) \cdots (-19) \cdots (+4) \cdots (-1)$					
$\star(-413) \cdots (-501) \cdot (+249) \cdots (+88) \cdot (-44) \cdots (-16) \cdot (+8) \cdots (+2) \cdot$					
[ +235]	[ +147]	[ -25]	[ +4]	[ -1]	
$\star(+228) \cdots (+143) \cdots (-23) \cdots (+4) \cdots (-1)$					
$\star(-588) \cdots (-567) \cdot (+230) \cdots (+87) \cdot (-35) \cdots (-13) \cdot (+5) \cdots (+2) \cdot$					
[ +288]	[ +195]	[ -29]	[ +4]	[ -1]	
$\star(+284) \cdots (+192) \cdots (-29) \cdots (+4) \cdots (-1)$					
$\star(-525) \cdots (-582) \cdot (+223) \cdots (+85) \cdot (-33) \cdots (-12) \cdot (+5) \cdots (+2) \cdot$					
[ +241]	[ +167]	[ -23]	[ +3]	[ -1]	
$\star(+96) \cdots (+74) \cdots (-8) \cdots (+1) \cdots (-0) \cdot$					
$\star(-54) \cdots (-41) \cdot (-15) \cdots (-3) \cdot (+5) \cdots (+2) \cdot (-1) \cdots (-0) \cdot$					
[ -43]	[ -18]	[ +6]	[ -1]	[ +0]	
[ -21]	[ -9]	[ +3]	[ -1]	[ +0]	
---	---	---	---	---	

2 .inci kat 2 .inci kolonun cokmesi hali

$*(+184)-----\{+662\}*\{-680\}-----\{-499\}*\{+398\}-----\{+114\}*\{-90\}-----\{-9\}*$   
[ -184] [ +18] [ +101] [ -24] [ +9]  
 $\{+389\}-----\{+729\}*\{-759\}-----\{-587\}*\{+350\}-----\{+116\}*\{-67\}-----\{-15\}*$   
[ -166] [ +14] [ +96] [ -21] [ +7]  
[ -223] [ +15] [ +101] [ -27] [ +8]  
[ -210] [ +14] [ +135] [ -25] [ +7]  
 $*(+485)-----\{+766\}*\{-795\}-----\{-636\}*\{+317\}-----\{+111\}*\{-54\}-----\{-15\}*$   
[ -275] [ +15] [ +185] [ -32] [ +8]  
[ -255] [ +12] [ +176] [ -28] [ +6]  
 $*\{+586\}-----\{+806\}*\{-832\}-----\{-690\}*\{+278\}-----\{+105\}*\{-41\}-----\{-14\}*$   
[ -331] [ +14] [ +235] [ -35] [ +7]  
[ -326] [ +14] [ +233] [ -35] [ +7]  
 $*\{+601\}-----\{+813\}*\{-838\}-----\{-701\}*\{+269\}-----\{+102\}*\{-39\}-----\{-13\}*$   
[ -275] [ +11] [ +200] [ -28] [ +5]  
[ -107] [ +21] [ +84] [ -9] [ +1]  
 $*\{+53\}-----\{+23\}*\{-20\}-----\{-32\}*\{-25\}-----\{-6\}*\{+7\}-----\{+13\}*$   
[ +54] [ -51] [ -28] [ +8] [ -3]  
[ +27] [ -31] [ -14] [ +4] [ -1]  
---

2 .inci kat 3 .inci kolonun cokmesi hali

\*(-42)-----(-394)\*(+503)-----(+752)\*(-752)-----(-503)\*(+394)-----(+42)\*  
[ +42] [ -109] [ +0] [ +109] [ -42]  
[ +36] [ -102] [ +0] [ +102] [ -36]  
\*(-78)-----(-345)\*(+593)-----(+796)\*(-796)-----(-593)\*(+345)-----(+78)\*  
[ +43] [ -146] [ -0] [ +146] [ -43]  
[ +39] [ -140] [ -0] [ +140] [ -39]  
\*(-85)-----(-312)\*(+641)-----(+821)\*(-821)-----(-641)\*(+312)-----(+85)\*  
[ +47] [ -190] [ -0] [ +190] [ -47]  
[ +41] [ -180] [ -0] [ +180] [ -41]  
\*(-90)-----(-275)\*(+694)-----(+847)\*(-847)-----(-694)\*(+275)-----(+90)\*  
[ +49] [ -239] [ -0] [ +239] [ -49]  
[ +49] [ -237] [ +0] [ +237] [ -49]  
\*(-87)-----(-265)\*(+704)-----(+852)\*(-852)-----(-704)\*(+265)-----(+87)\*  
[ +39] [ -203] [ +0] [ +203] [ -39]  
[ +12] [ -85] [ +0] [ +85] [ -12]  
\*(+2)-----(+24)\*(+31)-----(+15)\*(-15)-----(-31)\*(-24)-----(-2)\*  
[ -13] [ +30] [ -0] [ -30] [ +13]  
[ -7] [ +15] [ -0] [ -15] [ +7]

3 .inci kat 1 .inci kolonun çökmesi hali

$\times (-150) - \{-343\} \times (+272) - \{ +81\} \times \{-65\} - \{ -18\} \times \{ +15\} - \{ +1\} \times$				
[ +158]	[ +71]	[ -16]	[ +4]	[ -1]
$\times (-324) - \{-441\} \times \{ +265\} - \{ +88\} \times \{ -53\} - \{ -17\} \times \{ +10\} - \{ +2\} \times$				
[ +187]	[ +107]	[ -21]	[ +4]	[ -1]
$\times (-419) - \{-504\} \times \{ +250\} - \{ +89\} \times \{ -44\} - \{ -16\} \times \{ +7\} - \{ +2\} \times$				
[ +243]	[ +150]	[ -26]	[ +5]	[ -1]
$\times (-447) - \{-526\} \times \{ +242\} - \{ +88\} \times \{ -41\} - \{ -15\} \times \{ +7\} - \{ +2\} \times$				
[ +209]	[ +135]	[ -22]	[ +4]	[ -1]
$\times (-54) - \{-39\} \times \{ -12\} - \{ -1\} \times \{ +5\} - \{ +1\} \times \{ -1\} - \{ -0\} \times$				
[ -32]	[ -11]	[ +4]	[ -1]	[ +0]
$\times (-7) - \{ +4\} \times \{ +0\} - \{ -0\} \times \{ -1\} - \{ -0\} \times \{ +0\} - \{ +0\} \times$				
[ +6]	[ +1]	[ -1]	[ +0]	[ -0]
$\times (-3)$	[ +0]	[ -0]	[ +0]	[ -0]
---	---	---	---	---

3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *(+184) & ----- & \{+662\} *(-680) & ----- & \{-499\} *(+398) & ----- & \{+114\} *(-98) & ----- & \{-9\} * \\ [-184] & & [ +18] & & [ +181] & & [ -24] & & [ +9] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [-166] & & [ +14] & & [ +96] & & [ -21] & & [ +7] \\ *(+389) & ----- & \{-729\} *(+759) & ----- & \{-587\} *(+351) & ----- & \{+116\} *(-67) & ----- & \{-15\} * \\ [-222] & & [ +15] & & [ +148] & & [ -27] & & [ +8] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [-208] & & [ +13] & & [ +134] & & [ -25] & & [ +7] \\ *(+493) & ----- & \{+768\} *(-797) & ----- & \{-639\} *(+315) & ----- & \{+112\} *(-54) & ----- & \{-15\} * \\ [-284] & & [ +16] & & [ +189] & & [ -33] & & [ +8] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [-279] & & [ +15] & & [ +187] & & [ -32] & & [ +8] \\ *(+522) & ----- & \{+781\} *(-808) & ----- & \{-656\} *(+302) & ----- & \{+109\} *(-49) & ----- & \{-14\} * \\ [-243] & & [ +12] & & [ +167] & & [ -27] & & [ +6] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [-98] & & [ +3] & & [ +73] & & [ -18] & & [ +2] \\ *(+57) & ----- & \{-23\} *(-21) & ----- & \{-31\} *(-23) & ----- & \{-4\} *(+8) & ----- & \{+1\} * \\ [+41] & & [ -5] & & [ -19] & & [ +6] & & [ -3] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [+16] & & [ -2] & & [ -8] & & [ +2] & & [ -1] \\ *(-8) & ----- & \{-3\} *(+3) & ----- & \{+3\} *(+2) & ----- & \{-0\} *(-1) & ----- & \{+0\} * \\ [-8] & & [ +1] & & [ +3] & & [ -1] & & [ +1] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ [-4] & & [ +1] & & [ +1] & & [ -1] & & [ +0] \\ \vdots & & \vdots & & \vdots & & \vdots & & \vdots \\ \hline \end{array}$$

3 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-42) - (-394)*(+503) - (+752)*(-752) - (-503)*(+394) - (+42)* \\ & [+42] \quad [-109] \quad [+0] \quad [+109] \quad [-42] \\ & [-36] \quad [-102] \quad [+0] \quad [+102] \quad [-36] \\ & *(-78) - (-345)*(+592) - (+796)*(-796) - (-592)*(+345) - (+78)* \\ & [+42] \quad [-145] \quad [-0] \quad [+145] \quad [-42] \\ & [+38] \quad [-139] \quad [-0] \quad [+139] \quad [-38] \\ & *(-87) - (-311)*(+644) - (+822)*(-822) - (-644)*(+311) - (+87)* \\ & [+49] \quad [-195] \quad [-0] \quad [+195] \quad [-49] \\ & [+48] \quad [-192] \quad [-0] \quad [+192] \quad [-48] \\ & *(-87) - (-298)*(+661) - (+830)*(-830) - (-661)*(+298) - (+87)* \\ & [+39] \quad [-171] \quad [-0] \quad [+171] \quad [-39] \\ & [+13] \quad [-73] \quad [-0] \quad [+73] \quad [-13] \\ & *(-2) - (+22)*(+31) - (+15)*(-15) - (-31)*(-22) - (+2)* \\ & [-11] \quad [+21] \quad [-0] \quad [-21] \quad [+11] \\ & [-4] \quad [+9] \quad [+0] \quad [-9] \quad [+4] \\ & *(+1) - (-2)*(-3) - (-2)*(+2) - (+3)*(+2) - (-1)* \\ & [+3] \quad [-3] \quad [-0] \quad [+3] \quad [-3] \\ & [+1] \quad [-2] \quad [-0] \quad [+2] \quad [-1] \end{aligned}$$

4 .inci kat 1 .inci kolonun çökmesi hali

\*(-150)-----{-343)\*(+272)-----(+81)\*(-65)-----(-18)\*(+15)-----(+1)\*  
[ +150] [ +71] [ -16] [ +4] [ -1]  
[ +136] [ +70] [ -15] [ +3] [ -1]  
\*(-328)-----{-443)\*(+265)-----(+89)\*(-53)-----(-17)\*(+10)-----(+2)\*  
[ +192] [ +108] [ -21] [ +4] [ -1]  
[ +188] [ +107] [ -21] [ +4] [ -1]  
\*(-363)-----{-468)\*(+258)-----(+88)\*(-49)-----(-17)\*(+9)-----(+2)\*  
[ +175] [ +103] [ -19] [ +4] [ -1]  
[ +75] [ +49] [ -8] [ +1] [ -0]  
\*(-52)-----{-34)\*(-8)-----(+8)\*(+5)-----(+1)\*(-1)-----(-8)\*  
[ -23] [ -6] [ +3] [ -1] [ +0]  
[ -9] [ -3] [ +1] [ -0] [ +0]  
\*(+6)-----(+3)\*(-8)-----(-8)\*(-8)-----(-8)\*(+8)-----(-8)\*  
[ +4] [ +8] [ -8] [ +8] [ -8]  
[ +1] [ +0] [ -8] [ +8] [ -8]  
\*(-1)-----(-8)\*(+8)-----(+8)\*(+8)-----(-8)\*(-8)-----(+8)\*  
[ -1] [ +0] [ +8] [ -8] [ +0]  
[ -8] [ +0] [ +8] [ -8] [ +0]  
---

4 .inci kat 2 .inci kolonun çökmesi hali

\*{+184}-----{+662}\*{(-680)-----{-499}\*{(+398)-----{(+114)\*{(-90)-----{(-9)\*  
[ -184] [ +18] [ +101] [ -24] [ +9]  
[ -166] [ +14] [ +96] [ -21] [ +7]  
\*{(+394)-----{(+731)\*{(-761)-----{(-589)\*{(+350)-----{(+116)\*{(-67)-----{(-16)\*  
[ -229] [ +16] [ +143] [ -28] [ +8]  
[ -224] [ +15] [ +140] [ -28] [ +8]  
\*{(+431)-----{(+746)\*{(-774)-----{(-689)\*{(+335)-----{(+114)\*{(-61)-----{(-15)\*  
[ -207] [ +13] [ +133] [ -25] [ +7]  
[ -87] [ +4] [ +60] [ -10] [ +2]  
\*{(+56)-----{(+21)\*{(-21)-----{(-29)\*{(-19)-----{(-2)\*{(+7)-----{(+8)\*  
[ +30] [ -4] [ -12] [ +5] [ -2]  
[ +12] [ -2] [ -5] [ +2] [ -1]  
\*{(-7)-----{(-2)\*{(+3)-----{(+3)\*{(+1)-----{(-8)\*{(-1)-----{(+8)\*  
[ -5] [ +1] [ +1] [ -1] [ +1]  
[ -2] [ +8] [ +1] [ -8] [ +8]  
\*{(+1)-----{(+8)\*{(-8)-----{(-8)\*{(-8)-----{(+8)\*{(+8)-----{(-8)\*  
[ +1] [ -8] [ -8] [ +8] [ -8]  
[ +1] [ -8] [ -8] [ +8] [ -8]

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *[-42]-----[-394]*(+503)-----(+752)*(-752)-----[-503]*(+394)-----(+42)* \\ [-42] & [-109] & [0] & [+109] & [-42] \\ [-42] & [-102] & [0] & [+102] & [-35] \\ *[-80]-----[-344]*(+595)-----(+797)*(-797)-----[-595]*(+344)-----(+80)* \\ [-44] & [-148] & [0] & [+148] & [-44] \\ [-44] & [-146] & [0] & [+146] & [-43] \\ *[-81]-----[-330]*(+614)-----(+807)*(-807)-----[-614]*(+330)-----(+81)* \\ [-38] & [-138] & [0] & [+138] & [-38] \\ [-38] & [-61] & [0] & [+61] & [-14] \\ *[-5]-----(+19)*(+28)-----(+14)*(-14)-----(-28)*(-19)-----(+5)* \\ [-9] & [+14] & [0] & [-14] & [+9] \\ [-9] & [+6] & [0] & [-6] & [+3] \\ *[+2]-----(-1)*(-3)-----(-1)*(+1)-----(+3)*(+1)-----(-2)* \\ [-2] & [-2] & [0] & [+2] & [-2] \\ [-2] & [-1] & [0] & [+1] & [-1] \\ *[-0]-----(+0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)* \\ [-0] & [+0] & [0] & [-0] & [+0] \\ [-0] & [+0] & [0] & [-0] & [+0] \\ \hline \end{array}$$

5 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{cccccc} *(-153) & ----- & \{-344\} & *(+273) & ----- & \{ +81\} & * \{-65\} & ----- & \{-18\} & * \{ +15\} & ----- & \{ +2\} & * \\ \boxed{+153} & & \boxed{+72} & & \boxed{-16} & & \boxed{+4} & & \boxed{-2} & & & & \\ \boxed{+143} & & \boxed{+71} & & \boxed{-16} & & \boxed{+4} & & \boxed{-1} & & & & \\ * \{-279\} & ----- & \{-414\} & * \{ +269\} & ----- & \{ +87\} & * \{-56\} & ----- & \{-18\} & * \{ +11\} & ----- & \{ +2\} & * \\ \boxed{+136} & & \boxed{+74} & & \boxed{-15} & & \boxed{+3} & & \boxed{-1} & & & & \\ \boxed{+68} & & \boxed{+36} & & \boxed{-7} & & \boxed{+1} & & \boxed{-8} & & & & \\ * \{-46\} & ----- & \{-28\} & * \{-5\} & ----- & \{ +1\} & * \{ +4\} & ----- & \{ +1\} & * \{-1\} & ----- & \{ +0\} & * \\ \boxed{-15} & & \boxed{-3} & & \boxed{+2} & & \boxed{-1} & & \boxed{+0} & & & & \\ \boxed{-6} & & \boxed{-1} & & \boxed{+1} & & \boxed{-0} & & \boxed{+0} & & & & \\ * \{ +4\} & ----- & \{ +2\} & * \{-0\} & ----- & \{ -0\} & * \{-0\} & ----- & \{ +0\} & * \{ +0\} & ----- & \{ -0\} & * \\ \boxed{+2} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & & & \\ \boxed{+1} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & & & \\ * \{ -0\} & ----- & \{ -0\} & * \{ +0\} & ----- & \{ +0\} & * \{ -0\} & ----- & \{ -0\} & * \{ +0\} & ----- & \{ +0\} & * \\ \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & & & \\ \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & & & \\ * \{ +0\} & ----- & \{ +0\} & * \{ -0\} & ----- & \{ -0\} & * \{ +0\} & ----- & \{ +0\} & * \{ +0\} & ----- & \{ -0\} & * \\ \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & & & \\ \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & & & \\ \hline \end{array}$$

5 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccc} *(+100) & \cdots & (+663)*(-681) & \cdots & (-500)*(+397) \cdots (+114)*(-89) \cdots (-10)* \\ [-188] & [+19] & [+103] & [-25] & [+10] \\ [-175] & [+16] & [+99] & [-23] & [+8] \\ *(+339) & \cdots & (+711)*(-740) & \cdots & (-563)*(+365) \cdots (+117)*(-73) \cdots (-15)* \\ [-164] & [+13] & [+99] & [-21] & [+7] \\ [-71] & [+4] & [+46] & [-9] & [+2] \\ *(+52) & \cdots & (+18)*(-20) & \cdots & (-24)*(-15) \cdots (-1)*(+6) \cdots (-1)* \\ [+20] & [-3] & [-7] & [+3] & [-2] \\ [+8] & [-1] & [-3] & [+1] & [-1] \\ *(-5) & \cdots & (-2)*(+2) & \cdots & (+2)*(+1) \cdots (-8)*(-1) \cdots (+0)* \\ [-3] & [+1] & [+1] & [-8] & [+0] \\ [-1] & [+0] & [+0] & [-8] & [+0] \\ *(+1) & \cdots & (-+0)*(-0) & \cdots & (-0)*(-0) \cdots (+0)*(+0) \cdots (-0)* \\ [+1] & [-0] & [-0] & [+0] & [-0] \\ [+0] & [-0] & [-0] & [+0] & [-0] \\ *(-0) & \cdots & (-0)*(+0) & \cdots & (+0)*(-0) \cdots (-0)*(-0) \cdots (+0)* \\ [-0] & [+0] & [+0] & [-0] & [+0] \\ [-0] & [+0] & [+0] & [-0] & [+0] \\ \hline \end{array}$$

5 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-43) \cdots (-393) * (+504) \cdots (+752) * (-752) \cdots (-504) * (+393) \cdots (+43) * \\ & [ +43] \quad [ -111] \quad [ +0] \quad [ +111] \quad [ -43] \\ & [ +38] \quad [ -106] \quad [ +0] \quad [ +106] \quad [ -38] \\ & *(-72) \cdots (-359) * (+569) \cdots (+785) * (-785) \cdots (-569) * (+359) \cdots (+72) * \\ & [ +33] \quad [ -104] \quad [ -0] \quad [ +104] \quad [ -33] \\ & [ +13] \quad [ -47] \quad [ -0] \quad [ +47] \quad [ -13] \\ & *(-7) \cdots (+15) * (+24) \cdots (+12) * (-12) \cdots (-24) * (-15) \cdots (+7) * \\ & [ -6] \quad [ +9] \quad [ +0] \quad [ -9] \quad [ +6] \\ & [ -3] \quad [ +4] \quad [ +0] \quad [ -4] \quad [ +3] \\ & *(+1) \cdots (-1) * (-2) \cdots (-1) * (+1) \cdots (+2) * (+1) \cdots (-1) * \\ & [ +1] \quad [ -1] \quad [ -0] \quad [ +1] \quad [ -1] \\ & [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & *(-0) \cdots (+0) * (+0) \cdots (+0) * (-0) \cdots (-0) * (-0) \cdots (-0) * \\ & [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & *(+0) \cdots (-0) * (-0) \cdots (-0) * (+0) \cdots (+0) * (+0) \cdots (-0) * \\ & [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots \end{aligned}$$

6 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-111)-----\{-322\}*(+273)-----\{ +79\}*\{ -67\}-----\{ -19\}*\{ +16\}-----\{ +1\} * \\ [ +111] & \quad [ +49] \quad [ -12] \quad [ +3] \quad [ -1] \\ [ +51] & \quad [ +24] \quad [ -5] \quad [ +1] \quad [ -1] \\ & *(-41)-----\{ -23\}*\{ -1\}-----\{ +2\}*\{ +3\}-----\{ +0\}*\{ -1\}-----\{ +0\} * \\ [ -10] & \quad [ -1] \quad [ +1] \quad [ -0] \quad [ +0] \\ [ -4] & \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & *( +3)-----\{ +1\}*\{ -1\}-----\{ -0\}*\{ -0\}-----\{ +0\}*\{ +0\}-----\{ -0\} * \\ [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & *(-0)-----\{ -0\}*\{ +0\}-----\{ +0\}*\{ -0\}-----\{ -0\}*\{ -0\}-----\{ +0\} * \\ [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\ [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\ & *( +0)-----\{ +0\}*\{ -0\}-----\{ -0\}*\{ +0\}-----\{ +0\}*\{ -0\}-----\{ -0\} * \\ [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\ [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\ & *(-0)-----\{ -0\}*\{ +0\}-----\{ +0\}*\{ -0\}-----\{ -0\}*\{ +0\}-----\{ +0\} * \\ [ -0] & \quad [ +0] \quad [ -0] \quad [ +0] \quad [ +0] \\ [ -0] & \quad [ +0] \quad [ -0] \quad [ +0] \quad [ +0] \\ \hline \end{aligned}$$

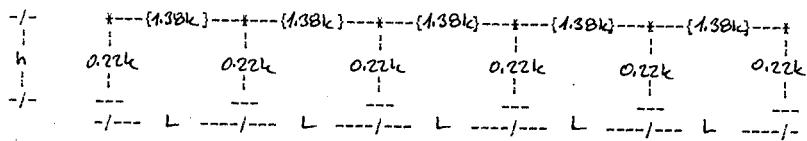
6 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned} & *{(+138)} - {(+647)} *{(-662)} - {(-480)} *{(+408)} - {(+113)} *{(-95)} - {(-8)} * \\ & [-138] \quad [ +15] \quad [ +72] \quad [ -18] \quad [ +8] \\ & [-63] \quad [ +6] \quad [ +34] \quad [ -8] \quad [ +3] \\ & *{(+50)} - {(+16)} *{(-19)} - {(-20)} *{(-10)} - {(-1)} *{(+5)} - {(-2)} * \\ & [+13] \quad [ -3] \quad [ -4] \quad [ +2] \quad [ -1] \\ & [+6] \quad [ -1] \quad [ -2] \quad [ +1] \quad [ -1] \\ & *{(-4)} - {(-1)} *{(+2)} - {(+1)} *{(+0)} - {(-0)} *{(-0)} - {(+0)} * \\ & [-2] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & [-1] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & *{(+0)} - {(+0)} *{(-0)} - {(-0)} *{(+0)} - {(+0)} *{(+0)} - {(-0)} * \\ & [+0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & [+0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\ & *{(-0)} - {(-0)} *{(+0)} - {(+0)} *{(-0)} - {(-0)} *{(-0)} - {(+0)} * \\ & [-0] \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\ & [-0] \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\ & *{(+0)} - {(+0)} *{(-0)} - {(-0)} *{(+0)} - {(+0)} *{(-0)} - {(-0)} * \\ & [+0] \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\ & [+0] \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \\ & \dots \quad \dots \quad \dots \quad \dots \quad \dots \end{aligned}$$

6 .inci kat 3 .inci kolonun çökmesi hali

\*{ -34}-----{-404}\*{+483}-----{+742}\*{-742}-----{-483}\*{+404}-----{ +34}\*  
[ +34] [ -79] [ +0] [ +79] [ -34]  
[ +14] [ -37] [ +0] [ +37] [ -14]  
\*{ -10}-----{ +11}\*{ +21}-----{ +11}\*{ -11}-----{ -21}\*{ -11}-----{ +10}\*  
[ -5] [ +5] [ -0] [ -5] [ +5]  
[ -2] [ +2] [ -0] [ -2] [ +2]  
\*{ +1}-----{ -0}\*{ -1}-----{ -1}\*{ +1}-----{ +1}\*{ +0}-----{ -1}\*  
[ +1] [ -0] [ +0] [ +0] [ -1]  
[ +0] [ -0] [ +0] [ +0] [ -0]  
\*{ -0}-----{ +0}\*{ +0}-----{ +0}\*{ -0}-----{ -0}\*{ -0}-----{ +0}\*  
[ -0] [ +0] [ -0] [ -0] [ +0]  
[ -0] [ +0] [ -0] [ -0] [ +0]  
\*{ +0}-----{ +0}\*{ -0}-----{ -0}\*{ +0}-----{ +0}\*{ -0}-----{ -0}\*  
[ +0] [ -0] [ +0] [ +0] [ -0]  
[ +0] [ -0] [ +0] [ +0] [ -0]  
\*{ -0}-----{ -0}\*{ +0}-----{ +0}\*{ -0}-----{ -0}\*{ +0}-----{ +0}\*  
[ -0] [ +0] [ +0] [ -0] [ +0]  
[ -0] [ +0] [ +0] [ -0] [ +0]  
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SİSTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

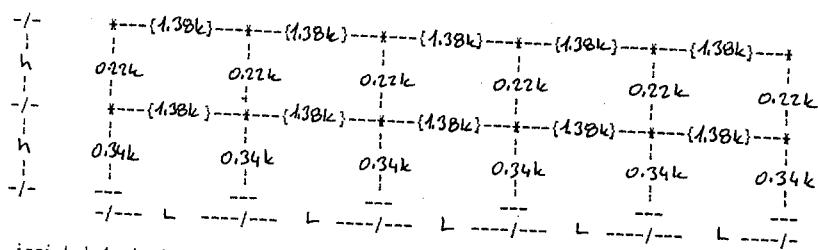
$$\begin{array}{cccccc} *(-114) & -(-323)*(+274) & -(+79)*(-67) & -(-19)*(+17) & -(+5)*(-4) & -(-0)* \\ [-114] & [ +49] & [ -12] & [ +3] & [ -1] & [ +0] \\ [-57] & [ +24] & [ -6] & [ +1] & [ -0] & [ +0] \\ \hline \end{array}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{array}{cccccc} *(+142) & -(+648)*(-664) & -(-482)*(+409) & -(+118)*(-100) & -(-28)*(+23) & -(+2)* \\ [-142] & [ +16] & [ +73] & [ -18] & [ +5] & [ -2] \\ [-71] & [ +8] & [ +36] & [ -9] & [ +2] & [ -1] \\ \hline \end{array}$$

1 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{array}{cccccc} *(-35) & -(-405)*(+486) & -(+747)*(-748) & -(-505)*(+428) & -(+119)*(-99) & -(-9)* \\ [+35] & [ -81] & [ +1] & [ +77] & [ -20] & [ +9] \\ [+17] & [ -40] & [ +0] & [ +38] & [ -10] & [ +4] \\ \hline \end{array}$$



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-153) - (-344)*(+272) - (+81)*(-65) - (-19)*(+15) - (+4)*(-3) - (-8)* \\
 & [ +153] \quad [ +72] \quad [ +16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +143] \quad [ +71] \quad [ -16] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & *(-283) - (-416)*(+270) - (+88)*(-56) - (-18)*(+12) - (+4)*(-2) - (-1)* \\
 & [ +141] \quad [ +75] \quad [ -16] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & [ +70] \quad [ +37] \quad [ -8] \quad [ +2] \quad [ -0] \quad [ +0]
 \end{aligned}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(+188) - (+663)*(-682) - (-501)*(+399) - (+118)*(-95) - (-27)*(+21) - (+2)* \\
 & [ -188] \quad [ +19] \quad [ +103] \quad [ -24] \quad [ +6] \quad [ -2] \\
 & [ -174] \quad [ +16] \quad [ +99] \quad [ -22] \quad [ +5] \quad [ -2] \\
 & *(+344) - (+713)*(-742) - (-565)*(+365) - (+119)*(-76) - (-24)*(+15) - (+3)* \\
 & [ -170] \quad [ +14] \quad [ +101] \quad [ -21] \quad [ +4] \quad [ -1] \\
 & [ -85] \quad [ +7] \quad [ +51] \quad [ -11] \quad [ +2] \quad [ -1]
 \end{aligned}$$

1 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-43) - (-394)*(+506) - (+757)*(-758) - (-523)*(+416) - (+119)*(-94) - (-10)* \\
 & [ +43] \quad [ -111] \quad [ +1] \quad [ +107] \quad [ -25] \quad [ +10] \\
 & [ +38] \quad [ -106] \quad [ +1] \quad [ +103] \quad [ -23] \quad [ +8] \\
 & *(-73) - (-359)*(+571) - (+787)*(-789) - (-580)*(+374) - (+120)*(-75) - (-16)* \\
 & [ +35] \quad [ -107] \quad [ +1] \quad [ +104] \quad [ -22] \quad [ +7] \\
 & [ +18] \quad [ -53] \quad [ +0] \quad [ +52] \quad [ -11] \quad [ +4]
 \end{aligned}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *{-111} & {-322} & {+273} & {+79} & {-67} & {-19} & {+17} \\ \hline [ +11] & [ +49] & [ -12] & [ +3] & [ -1] & [ +0] & [ +0] \\ [ +51] & [ +24] & [ -5] & [ +1] & [ -1] & [ +0] & [ +0] \\ *{ -41} & {-22} & { -1} & { +2} & { +3} & { +0} & { -1} \\ [ -10] & [ -1] & [ +1] & [ -0] & [ +0] & [ +0] & [ -8] \\ [ -5] & [ -0] & [ +0] & [ -0] & [ +0] & [ +0] & [ -0] \\ \hline \end{array}$$

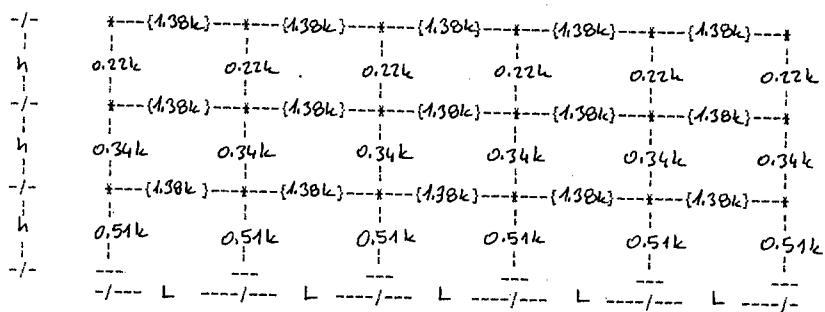
2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *{+138} & {-647} & {-663} & {-481} & {+409} & {+118} & {-101} \\ \hline [ -138] & [ +15] & [ +72] & [ -17] & [ +4] & [ -2] & [ -2] \\ [ -63] & [ +6] & [ +34] & [ -8] & [ +2] & [ -1] & [ -1] \\ *{ +49} & {+16} & { -19} & { -20} & { -11} & { +0} & { +6} \\ [ +14] & [ -3] & [ -4] & [ +2] & [ -1] & [ +0] & [ +0] \\ [ +7] & [ -1] & [ -2] & [ +1] & [ -0] & [ +0] & [ +0] \\ \hline \end{array}$$

2 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *{ -34} & {-405} & {+485} & {+747} & {-748} & {-504} & {+429} \\ \hline [ +34] & [ -79] & [ +1] & [ +76] & [ -19] & [ +8] & [ +8] \\ [ +14] & [ -37] & [ +8] & [ +36] & [ -9] & [ +3] & [ +3] \\ *{ -9} & {+11} & {+21} & {+10} & { -10} & { -18} & { -13} \\ [ -5] & [ +5] & [ -0] & [ -4] & [ +2] & [ -2] & [ -2] \\ [ -2] & [ +3] & [ -0] & [ -2] & [ +1] & [ -1] & [ -1] \\ \hline \end{array}$$

SİSTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *{-150} - {-343} * {+272} - {+81} * {+65} - {-19} * {+15} - {+4} * {+4} - {-4} - {-8} * \\
 & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +136] \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & \quad *{-328} - {-443} * {+265} - {+89} * {+53} - {-18} * {+10} - {+3} * {+2} - {-2} - {-8} * \\
 & [ +191] \quad [ +188] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +187] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & \quad *{-368} - {-470} * {+258} - {+89} * {+48} - {-17} * {+9} - {+3} * {+2} - {-2} - {-8} * \\
 & [ +181] \quad [ +105] \quad [ -20] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +91] \quad [ +53] \quad [ -10] \quad [ +2] \quad [ -8] \quad [ +0] \\
 & \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots
 \end{aligned}$$

1 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *{+184} - {-662} * {-680} - {-500} * {+399} - {-118} * {+95} - {-27} * {+22} - {-2} * \\
 & [ -184] \quad [ +18] \quad [ +101] \quad [ -23] \quad [ +5] \quad [ -2] \\
 & [ -166] \quad [ +14] \quad [ +96] \quad [ -21] \quad [ +5] \quad [ -2] \\
 & \quad *{+394} - {-731} * {-761} - {-589} * {+350} - {-117} * {+69} - {-23} * {+13} - {+3} * \\
 & [ -228] \quad [ +16] \quad [ +142] \quad [ -28] \quad [ +5] \quad [ -2] \\
 & [ -222] \quad [ +15] \quad [ +140] \quad [ -27] \quad [ +5] \quad [ -1] \\
 & \quad *{+438} - {-748} * {-777} - {-611} * {+335} - {-115} * {+63} - {-21} * {+11} - {+3} * \\
 & [ -215] \quad [ +14] \quad [ +137] \quad [ -26] \quad [ +5] \quad [ -1] \\
 & [ -108] \quad [ +7] \quad [ +68] \quad [ -13] \quad [ +2] \quad [ -1] \\
 & \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots
 \end{aligned}$$

1 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc}
 & *(-42) & -(-395)*(+504) & -(+756)*(-757) & -(-522)*(+416) & -(+119)*(-94) & -(-10)* \\
 [-42] & [-110] & [+1] & [+105] & [-25] & [+10] & \\
 [-35] & [-102] & [+1] & [+99] & [-22] & [+8] & \\
 & *(-88) & -(-344)*(+595) & -(+799)*(-800) & -(-602)*(+357) & -(+119)*(-68) & -(-16)* \\
 [-44] & [-148] & [+1] & [+145] & [-29] & [+8] & \\
 [-42] & [-146] & [+1] & [+143] & [-28] & [+8] & \\
 & *(-83) & -(-329)*(+617) & -(+809)*(-810) & -(-623)*(+341) & -(+116)*(-62) & -(-163)* \\
 [-40] & [-142] & [+0] & [+139] & [-27] & [+8] & \\
 [-20] & [-71] & [+0] & [+70] & [-13] & [+4] & \\
 \hline
 \end{array}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc}
 & *(-153) & -(-344)*(+273) & -(+81)*(-65) & -(-19)*(+15) & -(+4)*(-3) & -(-8)* \\
 [+153] & [+72] & [-16] & [+4] & [-1] & [+0] & \\
 [+143] & [+71] & [-16] & [+3] & [-1] & [+0] & \\
 & *(-279) & -(-414)*(+269) & -(+87)*(-57) & -(-18)*(+12) & -(+4)*(-2) & -(-8)* \\
 [+136] & [+74] & [-15] & [+3] & [-1] & [+0] & \\
 [+60] & [+36] & [-7] & [+1] & [-0] & [+0] & \\
 & *(-45) & -(-28)*(-5) & -(+1)*(+4) & -(+1)*(-1) & -(-8)*(+0) & -(+0)* \\
 [-15] & [-3] & [+2] & [-1] & [+0] & [-0] & \\
 [-8] & [-1] & [+1] & [-0] & [+0] & [-0] & \\
 \hline
 \end{array}$$

2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc}
 & *(+188) & -(+663)*(-682) & -(-501)*(+399) & -(+118)*(-95) & -(-27)*(+21) & -(+2)* \\
 [-188] & [+19] & [+183] & [-24] & [+6] & [-2] & \\
 [-175] & [+16] & [+99] & [-22] & [+5] & [-2] & \\
 & *(+339) & -(+711)*(-740) & -(-564)*(+366) & -(+119)*(-76) & -(-25)*(+15) & -(+3)* \\
 [-164] & [+13] & [+99] & [-20] & [+4] & [-1] & \\
 [-72] & [+5] & [+46] & [-9] & [+2] & [-0] & \\
 & *(+51) & -(+18)*(-19) & -(-24)*(-15) & -(-1)*(+7) & -(+1)*(-2) & -(-0)* \\
 [+21] & [-4] & [-7] & [+3] & [-1] & [+0] & \\
 [+10] & [-2] & [-4] & [+2] & [-0] & [+0] & \\
 \hline
 \end{array}$$

2 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-43) \cdots (-3943) * (+506) \cdots (+757) * (-758) \cdots (-523) * (+416) \cdots (+119) * (-94) \cdots (-10) * \\
 & [-43] \quad [-111] \quad [+1] \quad [+107] \quad [-26] \quad [+10] \\
 & [-38] \quad [-106] \quad [+1] \quad [+103] \quad [-23] \quad [+8] \\
 & *(-72) \cdots (-359) * (+578) \cdots (+787) * (-788) \cdots (-579) * (+375) \cdots (+120) * (-75) \cdots (-15) * \\
 & [-33] \quad [-104] \quad [+0] \quad [+102] \quad [-21] \quad [+7] \\
 & [-13] \quad [-48] \quad [+0] \quad [+47] \quad [-9] \quad [+2] \\
 & *(-6) \cdots (-15) * (+24) \cdots (+11) * (-11) \cdots (-22) * (-17) \cdots (-1) * (+7) \cdots (-0) * \\
 & [-7] \quad [+9] \quad [-0] \quad [-8] \quad [+3] \quad [-2] \\
 & [-3] \quad [+4] \quad [-0] \quad [-4] \quad [+2] \quad [-1] \\
 & \cdots \cdots \cdots \cdots \cdots \cdots
 \end{aligned}$$

3 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-111) \cdots (-322) * (+273) \cdots (+79) * (-67) \cdots (-19) * (+17) \cdots (+5) * (-4) \cdots (-0) * \\
 & [-111] \quad [-49] \quad [-12] \quad [+3] \quad [-1] \quad [+0] \\
 & [-51] \quad [+24] \quad [-5] \quad [+1] \quad [-0] \quad [+0] \\
 & *(-41) \cdots (-23) * (-1) \cdots (+2) * (+3) \cdots (+0) * (-1) \cdots (-0) * (+0) \cdots (-0) * \\
 & [-18] \quad [-1] \quad [+1] \quad [-0] \quad [+0] \quad [-0] \\
 & [-4] \quad [-0] \quad [+0] \quad [-0] \quad [+0] \quad [-0] \\
 & *(+3) \cdots (+1) * (-1) \cdots (-0) * (-0) \cdots (+0) * (+0) \cdots (-0) * (-0) \cdots (-0) * \\
 & [+1] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \quad [+0] \\
 & [+1] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \quad [+0] \\
 & \cdots \cdots \cdots \cdots \cdots \cdots
 \end{aligned}$$

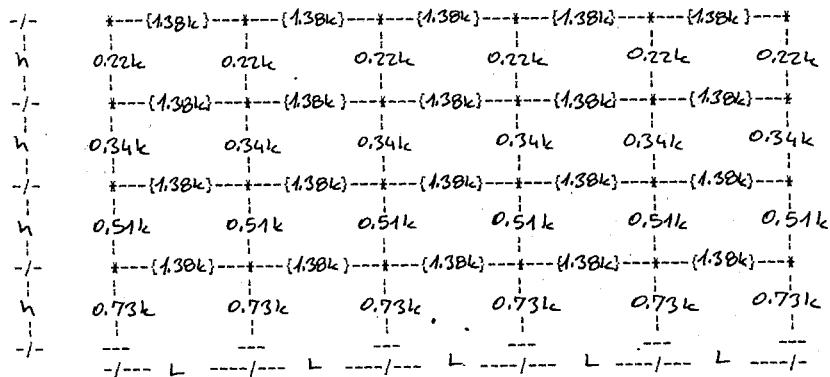
3 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(+138) \cdots (+647) * (-663) \cdots (-481) * (+409) \cdots (+118) * (-101) \cdots (-28) * (+23) \cdots (+2) * \\
 & [-138] \quad [+15] \quad [+72] \quad [-17] \quad [+4] \quad [-2] \\
 & [-63] \quad [+6] \quad [+34] \quad [-8] \quad [+23] \quad [-1] \\
 & *(+50) \cdots (+16) * (-19) \cdots (-20) * (-11) \cdots (+0) * (+6) \cdots (+1) * (-2) \cdots (-0) * \\
 & [+13] \quad [-3] \quad [-3] \quad [+2] \quad [-1] \quad [+0] \\
 & [+6] \quad [-1] \quad [-2] \quad [+1] \quad [-0] \quad [+0] \\
 & *(-4) \cdots (-13) * (+2) \cdots (+1) * (+0) \cdots (-0) * (-0) \cdots (+0) * (+0) \cdots (-0) * \\
 & [-2] \quad [+1] \quad [+0] \quad [-0] \quad [+0] \quad [-0] \\
 & [-1] \quad [+0] \quad [+0] \quad [-0] \quad [+0] \quad [-0]
 \end{aligned}$$

3 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-34) - (-405)*(+485) - (+747)*(-748) - (-504)*(+429) - (+119)*(-100) - (-8)* \\ & [ +34] \quad [ -79] \quad [ +1] \quad [ +76] \quad [ -19] \quad [ +8] \\ & [ +14] \quad [ -37] \quad [ +0] \quad [ +36] \quad [ -9] \quad [ +3] \\ & *(-10) - (+11)*(+21) - (+10)*(-10) - (-18)*(-13) - (+0)*(+6) - (-2)* \\ & [ -5] \quad [ +5] \quad [ -0] \quad [ -4] \quad [ +2] \quad [ -2] \\ & [ -2] \quad [ +2] \quad [ -0] \quad [ -2] \quad [ +1] \quad [ -1] \\ & *(+1) - (-0)*(-1) - (-1)*(+1) - (+1)*(+1) - (-0)*(-0) - (+0)* \\ & [ +1] \quad [ -1] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & [ +0] \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\ & --- \quad --- \quad --- \quad --- \quad --- \quad --- \end{aligned}$$

## SISTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *{-150} *{-343} *{+272} *{+81} *{ -65} *{-19} *{ +15} *{ +4} *{ -4} *{ -0} \\
 [ +150] & \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 \\
 [ +137] & \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & *{-324} *{-441} *{+265} *{+88} *{ -53} *{-18} *{ +11} *{ +3} *{ -2} *{ -0} \\
 [ +187] & \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 \\
 [ +176] & \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & *{-418} *{-504} *{+249} *{+89} *{ -44} *{-16} *{ +8} *{ +3} *{ -1} *{ -0} \\
 [ +242] & \quad [ +158] \quad [ -26] \quad [ +4] \quad [ -1] \quad [ +0] \\
 \\
 [ +236] & \quad [ +148] \quad [ -25] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & *{-454} *{-529} *{+242} *{+88} *{ -40} *{-15} *{ +7} *{ +2} *{ -1} *{ -0} \\
 [ +218] & \quad [ +139] \quad [ -23] \quad [ +4] \quad [ -1] \quad [ +0] \\
 \\
 [ +109] & \quad [ +70] \quad [ -12] \quad [ +2] \quad [ -0] \quad [ +0]
 \end{aligned}$$

1 .inci kat 2 .inci kolonun cokmesi hali

```

*{+184}-----{+662}*{-680}-----{-500}*{+399}-----{+118}*{ -95}-----{ -27}*{ +22}-----{ +2}*
[ -184]      [ +18]      [ +101]      [ -23]      [ +5]      [ -2]
[ -166]      [ +15]      [ +96]      [ -21]      [ +5]      [ -2]
*{+389}-----{+729}*{-759}-----{-587}*{+351}-----{+117}*{ -70}-----{ -23}*{ +13}-----{ +3}*
[ -222]      [ +15]      [ +148]      [ -27]      [ +5]      [ -2]
[ -209]      [ +13]      [ +134]      [ -25]      [ +5]      [ -1]
*{+492}-----{+768}*{-797}-----{-639}*{+316}-----{+112}*{ -55}-----{ -20}*{ +9}-----{ +3}*
[ -283]      [ +16]      [ +189]      [ -33]      [ +6]      [ -1]
[ -276]      [ +15]      [ +186]      [ -31]      [ +5]      [ -1]
*{+530}-----{+784}*{-811}-----{-660}*{+301}-----{+110}*{ -50}-----{ -18}*{ +8}-----{ +2}*
[ -254]      [ +13]      [ +173]      [ -29]      [ +5]      [ -1]
[ -127]      [ +7]      [ +87]      [ -14]      [ +2]      [ -1]
---
```

1 .inci kat 3 .inci kolonun cokmesi halde

```

*{ -42}----{-395}*{+504}----{+756}*{-757}----{-522}*{+416}----{+119}*{ -94}----{ -10}*
[ +42]      [ -110]      [ +1]      [ +105]      [ -25]      [ +10]
[ +36]      [ -103]      [ +1]      [ +99]      [ -22]      [ +8]
*{ -78}----{-345}*{+593}----{+798}*{-799}----{-600}*{+358}----{+118}*{ -69}----{ -16}*
[ +42]      [ -145]      [ +1]      [ +143]      [ -28]      [ +8]
[ +38]      [ -139]      [ +0]      [ +137]      [ -26]      [ +7]
*{ -87}----{-311}*{+644}----{+823}*{-824}----{-648}*{+320}----{+113}*{ -54}----{ -15}*
[ +49]      [ -194]      [ +0]      [ +192]      [ -33]      [ +8]
[ +46]      [ -191]      [ +0]      [ +188]      [ -32]      [ +8]
*{ -88}----{-296}*{+664}----{+833}*{-833}----{-668}*{+304}----{+110}*{ -49}----{ -15}*
[ +42]      [ -177]      [ +0]      [ +175]      [ -29]      [ +7]
[ +21]      [ -89]      [ +0]      [ +88]      [ -15]      [ +3]

```

2 .inci kat 1 .inci kolonun cokmesi hali

$*(-150) - (-343)*(+272) - (+81)*(-65) - (-19)*(+15) - (+4)*(-4) - (-0)*$						
[ +150]	[ +71]	[ -16]	[ +4]	[ -1]	[ +0]	
[ +136]	[ +78]	[ -15]	[ +3]	[ -1]	[ +0]	
	$*(-328) - (-443)*(+265) - (+89)*(-53) - (-18)*(+10) - (+3)*(-2) - (-0)*$					
[ +192]	[ +108]	[ -21]	[ +4]	[ -1]	[ +0]	
[ +188]	[ +107]	[ -21]	[ +4]	[ -1]	[ +0]	
	$*(-363) - (-468)*(+258) - (+88)*(-49) - (-17)*(+9) - (+3)*(-2) - (-0)*$					
[ +175]	[ +103]	[ -19]	[ +3]	[ -1]	[ +0]	
[ +75]	[ +483]	[ -81]	[ +1]	[ -81]	[ +0]	
	$*(-51) - (-34)*(-9) - (+8)*(+5) - (+1)*(-1) - (-0)*(+0) - (+0)*$					
[ -24]	[ -6]	[ +3]	[ -13]	[ +0]	[ -0]	
[ -12]	[ -3]	[ +2]	[ -01]	[ +0]	[ -0]	
---	---	---	---	---	---	---

2 .inci kat 2 .inci kolonun cokmesi hali

$*(+184) - (+662)*(-680) - (-500)*(+399) - (+118)*(-95) - (-27)*(+22) - (+2)*$						
[ -184]	[ +18]	[ +101]	[ -23]	[ +5]	[ -2]	
[ -166]	[ +14]	[ +96]	[ -20]	[ +5]	[ -2]	
	$*(+394) - (+731)*(-761) - (-589)*(+350) - (+118)*(-69) - (-23)*(+13) - (+3)*$					
[ -229]	[ +16]	[ +142]	[ -28]	[ +5]	[ -2]	
[ -224]	[ +15]	[ +140]	[ -27]	[ +5]	[ -2]	
	$*(+431) - (+746)*(-774) - (-609)*(+336) - (+115)*(-64) - (-22)*(+12) - (+3)*$					
[ -207]	[ +13]	[ +133]	[ -24]	[ +5]	[ -1]	
[ -87]	[ +4]	[ +60]	[ -10]	[ +2]	[ -0]	
	$*(+55) - (+21)*(-21) - (-28)*(-19) - (-3)*(+8) - (+2)*(-2) - (-0)*$					
[ +32]	[ -5]	[ -13]	[ +5]	[ -1]	[ +1]	
[ +16]	[ -2]	[ -6]	[ +2]	[ -1]	[ +0]	
---	---	---	---	---	---	---

2 .inci kat 3 .inci kolonun çökmesi hali

\*{ -42}-----{-395}\*{+504}-----{+756}\*{-757}-----{-522}\*{+416}-----{+119}\*{ -94}-----{ -10}\*

[ +42]	[ -118]	[ +1]	[ +105]	[ -25]	[ +10]
[ +35]	[ -102]	[ +1]	[ +99]	[ -22]	[ +8]
	*	{ -80}-----{-344}*{+595}-----{+799}*{-800}-----{-602}*{+357}-----{+119}*{ -68}-----{ -16}*			
[ +44]	[ -149]	[ +1]	[ +146]	[ -29]	[ +9]
[ +43]	[ -146]	[ +1]	[ +143]	[ -28]	[ +8]
	*	{ -81}-----{-330}*{+614}-----{+808}*{-809}-----{-621}*{+342}-----{+116}*{ -63}-----{ -15}*			
[ +38]	[ -138]	[ +0]	[ +135]	[ -25]	[ +7]
[ +14]	[ -61]	[ +0]	[ +61]	[ -10]	[ +2]
	*	{ -4}-----{ +19}*{+28}-----{ +14}*{ -13}-----{ -26}*{ -21}-----{ -3}*{ +8}-----{ +0}*			
[ -10]	[ +15]	[ -0]	[ -14]	[ +5]	[ -2]
[ -5]	[ +7]	[ -0]	[ -7]	[ +3]	[ -1]
	---	---	---	---	---

3 .inci kat 1 .inci kolonun çökmesi hali

\*{(-153)-----{-344}\*{+273}-----{ +81}\*{ -65}-----{ -19}\*{ +15}-----{ +4}\*{ -3}-----{ -0}\*

[ +153]	[ +72]	[ -16]	[ +4]	[ -1]	[ +0]
[ +143]	[ +71]	[ -16]	[ +3]	[ -1]	[ +0]
	*	{ -279}-----{-414}*{+269}-----{ +87}*{ -57}-----{ -18}*{ +12}-----{ +4}*{ -2}-----{ -0}*			
[ +136]	[ +74]	[ -15]	[ +3]	[ -1]	[ +0]
[ +60]	[ +36]	[ -7]	[ +1]	[ -0]	[ +0]
	*	{ -46}-----{ -28}*{ -5}-----{ +1}*{ +4}-----{ +1}*{ -1}-----{ -0}*{ +0}-----{ +0}*			
[ -15]	[ -33]	[ +2]	[ -1]	[ +0]	[ -0]
[ -6]	[ -13]	[ +1]	[ -0]	[ +0]	[ -0]
	*	{ +4}-----{ +2}*{ -0}-----{ -0}*{ -0}-----{ +0}*{ +0}-----{ +0}*{ -0}-----{ +0}*			
[ +21]	[ -0]	[ -0]	[ +0]	[ -0]	[ +0]
[ +1]	[ -0]	[ -0]	[ +0]	[ -0]	[ +0]
	---	---	---	---	---

3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *{+188} - {+663} *{-682} - {-501} *{+399} - {+118} *{-95} - {-27} *{+21} - {+2} * \\
 [-188] & \quad [ +19] \quad [ +103] \quad [ -24] \quad [ +6] \quad [ -2] \\
 [-175] & \quad [ +61] \quad [ +99] \quad [ -22] \quad [ +5] \quad [ -2] \\
 & *{+339} - {+711} *{-740} - {-564} *{+366} - {+119} *{-76} - {-24} *{+15} - {+3} * \\
 [-164] & \quad [ +13] \quad [ +99] \quad [ -20] \quad [ +4] \quad [ -1] \\
 [-71] & \quad [ +4] \quad [ +463] \quad [ -9] \quad [ +2] \quad [ -0] \\
 & *{+52} - {+18} *{-19} - {-24} *{-15} - {-1} *{+7} - {+1} *{-2} - {-3} * \\
 [+20] & \quad [ -3] \quad [ -7] \quad [ +3] \quad [ -1] \quad [ +0] \\
 [+81] & \quad [ -1] \quad [ -3] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *{-5} - {-1} *{+2} - {+2} *{+1} - {-8} *{-1} - {-8} *{+0} - {-8} * \\
 [-3] & \quad [ +1] \quad [ +1] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [-2] & \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 \end{aligned}$$

3 .inci kat 3 .inci kolonun cokmesi hali:

$$\begin{aligned}
 & *{-43} - {-394} *{+506} - {+757} *{-758} - {-523} *{+416} - {+119} *{-94} - {-10} * \\
 [+43] & \quad [ -111] \quad [ +1] \quad [ +107] \quad [ -26] \quad [ +10] \\
 [+39] & \quad [ -106] \quad [ +1] \quad [ +103] \quad [ -23] \quad [ +8] \\
 & *{-72} - {-359} *{+570} - {+787} *{-788} - {-579} *{+375} - {+120} *{-75} - {-15} * \\
 [+33] & \quad [ -104] \quad [ +0] \quad [ +101] \quad [ -21] \quad [ +7] \\
 [+13] & \quad [ -47] \quad [ +0] \quad [ +47] \quad [ -9] \quad [ +2] \\
 & *{-7} - {+15} *{+24} - {+12} *{-11} - {-22} *{-17} - {-1} *{+7} - {-1} * \\
 [-7] & \quad [ +9] \quad [ -0] \quad [ -8] \quad [ +3] \quad [ -2] \\
 [-3] & \quad [ +4] \quad [ -0] \quad [ -3] \quad [ +1] \quad [ -1] \\
 & *{+1} - {-1} *{-2} - {-1} *{+1} - {+2} *{+1} - {-8} *{-13} - {+0} * \\
 [+1] & \quad [ -1] \quad [ +0] \quad [ +1] \quad [ -1] \quad [ +0] \\
 [+1] & \quad [ -1] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 \end{aligned}$$

4 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned} & *(-111) \cdots (-322)*(+273) \cdots (+79)*(-67) \cdots (-19)*(+17) \cdots (+5)*(-4) \cdots (-0)* \\ [+111] & \quad [+491] \quad [-121] \quad [+31] \quad [-1] \quad [+] \\ [-51] & \quad [+241] \quad [-51] \quad [+11] \quad [-0] \quad [+] \\ & *(-41) \cdots (-23)*(-1) \cdots (+2)*(+3) \cdots (+0)*(-1) \cdots (-0)*(+0) \cdots (-0)* \\ [-10] & \quad [-11] \quad [+11] \quad [-0] \quad [+] \\ [-4] & \quad [-0] \quad [+0] \quad [-0] \quad [+] \\ & *(+3) \cdots (+1)*(-1) \cdots (-0)*(-0) \cdots (+0)*(+0) \cdots (-0)*(-0) \cdots (+0)* \\ [+1] & \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ [+0] & \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ & *(-0) \cdots (-0)*(+0) \cdots (+0)*(-0) \cdots (-0)*(-0) \cdots (+0)*(+0) \cdots (-0)* \\ [-0] & \quad [+0] \quad [-0] \quad [-0] \quad [+] \\ [-0] & \quad [-0] \quad [-0] \quad [-0] \quad [+] \end{aligned}$$

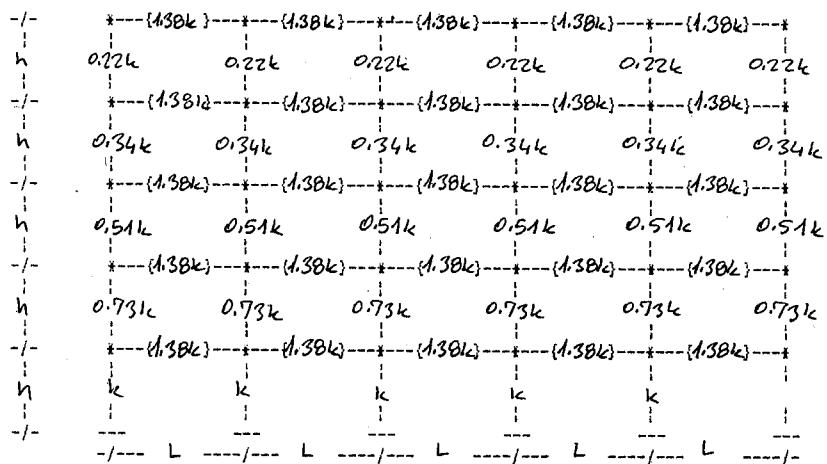
4 .inci kat 2 .inci kolonun çökmesi hali

$$\begin{aligned} & *(+138) \cdots (+647)*(-663) \cdots (-481)*(+409) \cdots (+118)*(-101) \cdots (-28)*(+23) \cdots (+2)* \\ [-138] & \quad [+5] \quad [+72] \quad [-17] \quad [+4] \quad [-2] \\ [-63] & \quad [+6] \quad [+34] \quad [-8] \quad [+2] \quad [-1] \\ & *(+50) \cdots (+16)*(-19) \cdots (-20)*(-11) \cdots (+0)*(+6) \cdots (+1)*(-2) \cdots (+0)* \\ [+13] & \quad [-3] \quad [-3] \quad [+2] \quad [-1] \quad [+] \\ [+6] & \quad [-1] \quad [-2] \quad [+1] \quad [-0] \quad [+] \\ & *(-4) \cdots (-1)*(+2) \cdots (+1)*(+0) \cdots (-0)*(-0) \cdots (+0)*(+0) \cdots (-0)* \\ [-2] & \quad [+0] \quad [+0] \quad [-0] \quad [+] \\ [-1] & \quad [+0] \quad [+0] \quad [-0] \quad [+] \\ & *(+0) \cdots (+0)*(-0) \cdots (-0)*(+0) \cdots (+0)*(+0) \cdots (-0)*(-0) \cdots (+0)* \\ [+0] & \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ [+0] & \quad [-0] \quad [-0] \quad [+0] \quad [-0] \end{aligned}$$

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{cccccc}
 & *(-34) & -(-405)*(+485) & -(-747)*(-748) & -(-504)*(+429) & -(+119)*(-100) & -(-8)* \\
 [ +34] & [ -79] & [ +1] & [ +76] & [ -19] & [ +8] & \\
 [ +14] & [ -37] & [ +0] & [ +36] & [ -9] & [ +3] & \\
 & *(-10) & -(+11)*(+21) & -(+10)*(-10) & -(-10)*(-13) & -(+0)*(+6) & -(-2)* \\
 [ -5] & [ +5] & [ -0] & [ -4] & [ +2] & [ -2] & \\
 [ -2] & [ +2] & [ -0] & [ -2] & [ +1] & [ -1] & \\
 & *(+1) & -(-0)*(-1) & -(-1)*(+1) & -(+1)*(+1) & -(-0)*(-0) & -(+0)* \\
 [ +1] & [ -1] & [ +0] & [ +0] & [ -0] & [ +0] & \\
 [ +0] & [ -0] & [ +0] & [ +0] & [ -0] & [ +0] & \\
 & *(-0) & -(+0)*(+0) & -(+0)*(-0) & -(-0)*(-0) & -(+0)*(+0) & -(-0)* \\
 [ -0] & [ +0] & [ -0] & [ -0] & [ +0] & [ -0] & \\
 [ -0] & [ +0] & [ -0] & [ -0] & [ +0] & [ -0] & \\
 \hline
 \end{array}$$

#### SİSTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun cokmesi hali

-114-

\*{-150}-----{-343}\*(+272)-----{ +81}\*{ -65}-----{ -19}\*{ +15}-----{ +4}\*{ -4}-----{ -8}\*  
[ +150] [ +71] [ -16] [ +4] [ -1] [ +0]  
[ +137] [ +70] [ -15] [ +3] [ -1] [ +0]  
\*{-324}-----{-442}\*(+265)-----{ +88}\*{ -53}-----{ -18}\*{ +10}-----{ +3}\*{ -2}-----{ -8}\*  
[ +187] [ +107] [ -21] [ +4] [ -1] [ +0]  
[ +177] [ +104] [ -19] [ +4] [ -1] [ +0]  
\*{-413}-----{-501}\*(+249)-----{ +88}\*{ -44}-----{ -16}\*{ +8}-----{ +3}\*{ -1}-----{ -8}\*  
[ +235] [ +147] [ -25] [ +4] [ -1] [ +0]  
[ +220] [ +143] [ -23] [ +4] [ -1] [ +0]  
\*{-507}-----{-567}\*(+230)-----{ +87}\*{ -35}-----{ -13}\*{ +5}-----{ +2}\*{ -1}-----{ -8}\*  
[ +286] [ +194] [ -29] [ +4] [ -1] [ +0]  
[ +281] [ +192] [ -28] [ +4] [ -1] [ +0]  
\*{-532}-----{-587}\*(+222)-----{ +85}\*{ -32}-----{ -12}\*{ +5}-----{ +2}\*{ -1}-----{ -8}\*  
[ +252] [ +173] [ -25] [ +4] [ -1] [ +0]  
[ +126] [ +87] [ -12] [ +2] [ -0] [ +0]  
---

1 .inci kat 2 .inci kolonun cokmesi hali

\*(+184)-----{+662}\*(+600)-----{-500}\*(+399)-----{+118}\*(-95)-----{ -27}\*{ +22}-----{ +2}\*  
[ -184] [ +18] [ +101] [ -23] [ +5] [ -2]  
[ -166] [ +14] [ +96] [ -21] [ +5] [ -2]  
\*{+389}-----{+729}\*(-759)-----{-587}\*(+351)-----{+117}\*(-78)-----{ -23}\*{ +13}-----{ +3}\*  
[ -223] [ +15] [ +148] [ -27] [ +5] [ -2]  
[ -210] [ +14] [ +135] [ -25] [ +5] [ -1]  
\*{+485}-----{+766}\*(-795)-----{-636}\*(+317)-----{+112}\*(-56)-----{ -20}\*{ +10}-----{ +3}\*  
[ -275] [ +15] [ +185] [ -31] [ +5] [ -1]  
[ -255] [ +12] [ +176] [ -28] [ +5] [ -1]  
\*{+584}-----{+806}\*(-831)-----{-690}\*(+279)-----{+105}\*(-42)-----{ -16}\*{ +6}-----{ +2}\*  
[ -329] [ +14] [ +235] [ -35] [ +5] [ -1]  
[ -322] [ +13] [ +231] [ -34] [ +5] [ -1]  
\*{+610}-----{+817}\*(-841)-----{-705}\*(+266)-----{+102}\*(-38)-----{ -15}\*{ +5}-----{ +2}\*  
[ -288] [ +11] [ +208] [ -38] [ +4] [ -1]  
[ -144] [ +6] [ +104] [ -15] [ +2] [ -0]  
---

1 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-42)-----\{-395\}*(+504)-----\{+756\}*\{-757\}-----\{-522\}*(+416)-----\{+119\}*\{-94\}-----\{-10\}* \\
 [ +42] & \quad [ -110] \quad [ +1] \quad [ +105] \quad [ -25] \quad [ +10] \\
 [ +36] & \quad [ -103] \quad [ +1] \quad [ +99] \quad [ -22] \quad [ +8] \\
 & *(-79)-----\{-345\}*(+593)-----\{+798\}*\{-799\}-----\{-600\}*(+358)-----\{+118\}*\{-69\}-----\{-16\}* \\
 [ +43] & \quad [ -146] \quad [ +1] \quad [ +143] \quad [ -28] \quad [ +8] \\
 [ +39] & \quad [ -140] \quad [ +0] \quad [ +137] \quad [ -26] \quad [ +7] \\
 & *(-85)-----\{-312\}*(+641)-----\{+821\}*\{-822\}-----\{-646\}*(+322)-----\{+113\}*\{-55\}-----\{-15\}* \\
 [ +47] & \quad [ -190] \quad [ +0] \quad [ +187] \quad [ -32] \quad [ +8] \\
 [ +41] & \quad [ -180] \quad [ +0] \quad [ +178] \quad [ -29] \quad [ +7] \\
 & *(-90)-----\{-275\}*(+694)-----\{+847\}*\{-848\}-----\{-696\}*(+281)-----\{+106\}*\{-42\}-----\{-14\}* \\
 [ +49] & \quad [ -239] \quad [ +0] \quad [ +237] \quad [ -35] \quad [ +7] \\
 [ +47] & \quad [ -235] \quad [ +0] \quad [ +233] \quad [ -34] \quad [ +7] \\
 & *(-88)-----\{-263\}*(+709)-----\{+855\}*\{-855\}-----\{-710\}*(+268)-----\{+103\}*\{-38\}-----\{-13\}* \\
 [ +41] & \quad [ -211] \quad [ +0] \quad [ +209] \quad [ -30] \quad [ +6] \\
 [ +21] & \quad [ -105] \quad [ +0] \quad [ +105] \quad [ -15] \quad [ +3] \\
 \hline
 \end{aligned}$$

2 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-150)-----\{-343\}*(+272)-----\{+81\}*\{-65\}-----\{-19\}*\{+15\}-----\{+4\}*\{-4\}-----\{-0\}* \\
 [ +150] & \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 [ +137] & \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & +\{-324\}-----\{-441\}*(+265)-----\{+89\}*\{-53\}-----\{-18\}*\{+11\}-----\{+3\}*\{-2\}-----\{-0\}* \\
 [ +187] & \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 [ +176] & \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & *(-419)-----\{-504\}*(+250)-----\{+89\}*\{-44\}-----\{-16\}*\{+8\}-----\{+3\}*\{-1\}-----\{-0\}* \\
 [ +243] & \quad [ +150] \quad [ -26] \quad [ +4] \quad [ -1] \quad [ +0] \\
 [ +238] & \quad [ +148] \quad [ -25] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & *(-448)-----\{-526\}*(+242)-----\{+88\}*\{-41\}-----\{-15\}*\{+7\}-----\{+2\}*\{-1\}-----\{-0\}* \\
 [ +210] & \quad [ +135] \quad [ -22] \quad [ +4] \quad [ -1] \quad [ +0] \\
 [ +87] & \quad [ +62] \quad [ -8] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *(-54)-----\{-38\}*\{-12\}-----\{-1\}*\{+5\}-----\{+1\}*\{-1\}-----\{-0\}*\{+0\}-----\{+0\}* \\
 [ -33] & \quad [ -11] \quad [ +4] \quad [ -1] \quad [ +0] \quad [ -0] \\
 [ -17] & \quad [ -6] \quad [ +2] \quad [ -1] \quad [ +0] \quad [ -0] \\
 \hline
 \end{aligned}$$

$$\begin{aligned}
 & *{(+184)} - {(-662)} *{(-680)} - {(-500)} *{(+399)} - {(+118)} *{(-95)} - {(-27)} *{(+22)} - {(-2)} * \\
 & [-184] \quad [+] 18] \quad [+] 101] \quad [-23] \quad [+] 5] \quad [-2] \\
 & [-167] \quad [+] 15] \quad [+] 96] \quad [-21] \quad [+] 5] \quad [-2] \\
 & *{(+389)} - {(+729)} *{(-759)} - {(-587)} *{(+351)} - {(+117)} *{(-70)} - {(-23)} *{(+13)} - {(+3)} * \\
 & [-222] \quad [+] 15] \quad [+] 140] \quad [-27] \quad [+] 5] \quad [-1] \\
 & [-208] \quad [+] 13] \quad [+] 134] \quad [-25] \quad [+] 5] \quad [-1] \\
 & *{(+493)} - {(+768)} *{(-797)} - {(-639)} *{(+316)} - {(+113)} *{(-55)} - {(-20)} *{(+9)} - {(+3)} * \\
 & [-284] \quad [+] 16] \quad [+] 189] \quad [-33] \quad [+] 6] \quad [-1] \\
 & \cdot \\
 & [-279] \quad [+] 15] \quad [+] 186] \quad [-32] \quad [+] 6] \quad [-1] \\
 & *{(+522)} - {(+781)} *{(-808)} - {(-656)} *{(+303)} - {(+110)} *{(-51)} - {(-18)} *{(+8)} - {(+2)} * \\
 & [-243] \quad [+] 12] \quad [+] 167] \quad [-27] \quad [+] 4] \quad [-1] \\
 & [-98] \quad [+] 3] \quad [+] 73] \quad [-10] \quad [+] 1] \quad [-0] \\
 & *{(+56)} - {(+22)} *{(-21)} - {(-31)} *{(-23)} - {(-5)} *{(+8)} - {(+2)} *{(-2)} - {(-0)} * \\
 & [+43] \quad [-5] \quad [-20] \quad [+] 7] \quad [-2] \quad [+1] \\
 & [+21] \quad [-3] \quad [-10] \quad [+] 3] \quad [-1] \quad [+0] \\
 & \cdots
 \end{aligned}$$

$$\begin{aligned}
 & *{(-42)} - {(-395)} *{(+504)} - {(-756)} *{(-757)} - {(-522)} *{(+416)} - {(+119)} *{(-94)} - {(-10)} * \\
 & [+42] \quad [-110] \quad [+] 1] \quad [+] 105] \quad [-25] \quad [+10] \\
 & [+36] \quad [-103] \quad [+] 1] \quad [+] 99] \quad [-22] \quad [+8] \\
 & *{(-78)} - {(-345)} *{(+593)} - {(-798)} *{(-799)} - {(-600)} *{(+358)} - {(+118)} *{(-69)} - {(-16)} * \\
 & [+42] \quad [-145] \quad [+] 1] \quad [+] 143] \quad [-28] \quad [+8] \\
 & \cdot \\
 & [+38] \quad [-139] \quad [+] 0] \quad [+] 137] \quad [-25] \quad [+7] \\
 & *{(-87)} - {(-311)} *{(+644)} - {(-823)} *{(-824)} - {(-649)} *{(+320)} - {(+113)} *{(-54)} - {(-15)} * \\
 & [+49] \quad [-195] \quad [+] 0] \quad [+] 192] \quad [-34] \quad [+8] \\
 & [+48] \quad [-192] \quad [+] 0] \quad [+] 189] \quad [-33] \quad [+8] \\
 & *{(-87)} - {(-298)} *{(+661)} - {(-831)} *{(-832)} - {(-665)} *{(+306)} - {(+110)} *{(-50)} - {(-15)} * \\
 & [+39] \quad [-171] \quad [+] 0] \quad [+] 169] \quad [-28] \quad [+6] \\
 & [+13] \quad [-74] \quad [+] 0] \quad [+] 73] \quad [-10] \quad [+2] \\
 & *{(-13)} - {(-22)} *{(+30)} - {(-15)} *{(-15)} - {(-29)} *{(-24)} - {(-5)} *{(+8)} - {(-1)} * \\
 & [-12] \quad [+] 22] \quad [-0] \quad [-21] \quad [+] 7] \quad [-3] \\
 & [-6] \quad [+] 11] \quad [-0] \quad [-10] \quad [+] 3] \quad [-1] \\
 & \cdots
 \end{aligned}$$

3 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-150) - (-343)*(+272) - (+81)*(-65) - (-19)*(+15) - (+4)*(-4) - (-8)* \\
 & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +136] \quad [ +703] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & \quad *(-328) - (-443)*(+265) - (+89)*(-53) - (-18)*(+10) - (+3)*(-2) - (-8)* \\
 & [ +192] \quad [ +108] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +168] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & \quad *(-363) - (-468)*(+258) - (+88)*(-49) - (-17)*(+9) - (+3)*(-2) - (-8)* \\
 & [ +175] \quad [ +103] \quad [ -19] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & [ +75] \quad [ +49] \quad [ -8] \quad [ +1] \quad [ -8] \quad [ +0] \\
 & \quad *(-52) - (-34)*(-8) - (+8)*(+5) - (+13)*(-2) - (-3)*(+8) - (+8)* \\
 & [ -23] \quad [ -6] \quad [ +3] \quad [ -1] \quad [ +8] \quad [ -8] \\
 & [ -9] \quad [ -3] \quad [ +1] \quad [ -8] \quad [ +0] \quad [ -8] \\
 & \quad *(+5) - (+3)*(-8) - (-8)*(-8) - (-8)*(+8) - (+8)*(-8) - (-8)* \\
 & [ +4] \quad [ +8] \quad [ -8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & [ +2] \quad [ +8] \quad [ -8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots
 \end{aligned}$$

3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(+184) - (+662)*(-680) - (-500)*(+399) - (+118)*(-95) - (-27)*(+22) - (+2)* \\
 & [ -184] \quad [ +18] \quad [ +101] \quad [ -23] \quad [ +5] \quad [ -2] \\
 & [ -168] \quad [ +14] \quad [ +96] \quad [ -20] \quad [ +5] \quad [ -2] \\
 & \quad *(+394) - (+731)*(-761) - (-589)*(+358) - (+118)*(-69) - (-23)*(+13) - (+3)* \\
 & [ -229] \quad [ +16] \quad [ +142] \quad [ -28] \quad [ +5] \quad [ -2] \\
 & [ -224] \quad [ +16] \quad [ +140] \quad [ -27] \quad [ +5] \quad [ -2] \\
 & \quad *(+431) - (+746)*(-774) - (-609)*(+336) - (+115)*(-64) - (-22)*(+12) - (+3)* \\
 & [ -207] \quad [ +13] \quad [ +133] \quad [ -24] \quad [ +5] \quad [ -1] \\
 & [ -87] \quad [ +4] \quad [ +60] \quad [ -10] \quad [ +2] \quad [ -8] \\
 & \quad *(+56) - (+21)*(-21) - (-28)*(-19) - (-3)*(+8) - (+2)*(-2) - (-8)* \\
 & [ +30] \quad [ -4] \quad [ -12] \quad [ +5] \quad [ -1] \quad [ +1] \\
 & [ +12] \quad [ -2] \quad [ -5] \quad [ +2] \quad [ -8] \quad [ +8] \\
 & \quad *(-7) - (-23)*(+3) - (+3)*(+1) - (-8)*(-1) - (-8)*(+8) - (-8)* \\
 & [ -5] \quad [ +1] \quad [ +1] \quad [ -1] \quad [ +8] \quad [ -8] \\
 & [ -3] \quad [ +1] \quad [ +1] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots
 \end{aligned}$$

$$\begin{aligned}
 & *(-42) - (-395)*(+504) - (+756)*(-757) - (-522)*(+416) - (+119)*(-94) - (-10)* \\
 & [ +42] \quad [-110] \quad [ +1] \quad [ +105] \quad [ -25] \quad [ +10] \\
 & [ +35] \quad [-102] \quad [ +1] \quad [ +99] \quad [ -22] \quad [ +8] \\
 & *(-80) - (-344)*(+595) - (+799)*(-800) - (-602)*(+357) - (+119)*(-68) - (-16)* \\
 & [ +44] \quad [-149] \quad [ +1] \quad [ +146] \quad [ -29] \quad [ +9] \\
 & [ +43] \quad [-146] \quad [ +1] \quad [ +143] \quad [ -28] \quad [ +8] \\
 & *(-81) - (-330)*(+614) - (+808)*(-809) - (-621)*(+342) - (+116)*(-63) - (-15)* \\
 & [ +38] \quad [-138] \quad [ +0] \quad [ +135] \quad [ -25] \quad [ +7] \\
 & [ +14] \quad [-61] \quad [ +0] \quad [ +60] \quad [ -10] \quad [ +2] \\
 & *(-5) - (+19)*(+28) - (+14)*(-14) - (-26)*(-21) - (-3)*(+8) - (+8)* \\
 & [ -9] \quad [ +14] \quad [ -0] \quad [ -13] \quad [ +5] \quad [ -2] \\
 & [ -3] \quad [ +6] \quad [ -0] \quad [ -6] \quad [ +2] \quad [ -1] \\
 & *(+1) - (-1)*(-3) - (-1)*(+1) - (+2)*(+2) - (-0)*(-1) - (+0)* \\
 & [ +2] \quad [ -2] \quad [ +0] \quad [ +2] \quad [ -1] \quad [ +1] \\
 & [ +1] \quad [ -1] \quad [ +0] \quad [ +1] \quad [ -0] \quad [ +0] \\
 \end{aligned}$$

## 4 .inci kat 1 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-153) - (-344)*(+273) - (+81)*(-65) - (-19)*(+15) - (+4)*(-3) - (-0)* \\
 & [ +153] \quad [ +72] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\
 & [ +143] \quad [ +71] \quad [ -16] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & *(-279) - (-414)*(+269) - (+87)*(-57) - (-18)*(+12) - (+4)*(-2) - (-0)* \\
 & [ +136] \quad [ +74] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\
 & [ +60] \quad [ +36] \quad [ -7] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *(-46) - (-28)*(-5) - (+1)*(+4) - (+1)*(-1) - (-0)*(+0) - (+0)* \\
 & [ -15] \quad [ -3] \quad [ +2] \quad [ -1] \quad [ +0] \quad [ -0] \\
 & [ -6] \quad [ -1] \quad [ +1] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *(+4) - (+2)*(-0) - (-0)*(+0) - (+0)*(+0) - (+0)*(-0) - (-0)* \\
 & [ +2] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & [ +1] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & *(-0) - (-0)*(+0) - (+0)*(+0) - (-0)*(-0) - (+0)*(+0) - (-0)* \\
 & [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 \end{aligned}$$

4 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(+188) - (-663)*(-682) - (-501)*(+399) - (+119)*(-95) - (-27)*(+21) - (+2)* \\
 [ -188] & \quad [ +19] \quad [ +103] \quad [ -24] \quad [ +6] \quad [ -2] \\
 [ -175] & \quad [ +16] \quad [ +99] \quad [ -22] \quad [ +5] \quad [ -2] \\
 & *(+339) - (+711)*(-740) - (-564)*(+366) - (+119)*(-76) - (-24)*(+15) - (+3)* \\
 [ -164] & \quad [ +13] \quad [ +99] \quad [ -20] \quad [ +4] \quad [ -1] \\
 [ -71] & \quad [ +4] \quad [ +46] \quad [ -9] \quad [ +2] \quad [ -0] \\
 & *(+52) - (+18)*(-19) - (-24)*(-15) - (-1)*(+7) - (+1)*(-2) - (-0)* \\
 [ +28] & \quad [ -3] \quad [ -7] \quad [ +3] \quad [ -1] \quad [ +0] \\
 [ +8] & \quad [ -1] \quad [ -3] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *(-5) - (-2)*(+2) - (+2)*(+1) - (-0)*(-1) - (-0)*(+0) - (-0)* \\
 [ -3] & \quad [ +1] \quad [ +1] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -1] & \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *(+1) - (+0)*(-0) - (-0)*(-0) - (+0)*(+0) - (-0)*(-0) - (+0)* \\
 [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 \end{aligned}$$

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-43) - (-394)*(+506) - (+757)*(-758) - (-523)*(+416) - (+119)*(-94) - (-10)* \\
 [ +43] & \quad [ -111] \quad [ +1] \quad [ +107] \quad [ -26] \quad [ +10] \\
 [ +39] & \quad [ -106] \quad [ +1] \quad [ +103] \quad [ -23] \quad [ +8] \\
 & *(-72) - (-359)*(+570) - (+787)*(-788) - (-579)*(+375) - (+120)*(-75) - (-15)* \\
 [ +33] & \quad [ -104] \quad [ +0] \quad [ +101] \quad [ -21] \quad [ +7] \\
 [ +13] & \quad [ -47] \quad [ +0] \quad [ +47] \quad [ -9] \quad [ +2] \\
 & *(-7) - (+15)*(+24) - (+12)*(-11) - (-22)*(-17) - (-1)*(+7) - (-1)* \\
 [ -7] & \quad [ +9] \quad [ -0] \quad [ -8] \quad [ +3] \quad [ -2] \\
 [ -3] & \quad [ +4] \quad [ -0] \quad [ -3] \quad [ +1] \quad [ -1] \\
 & *(+1) - (-1)*(-2) - (-1)*(+1) - (+2)*(+1) - (-0)*(-1) - (+0)* \\
 [ +1] & \quad [ -1] \quad [ +0] \quad [ +1] \quad [ -1] \quad [ +0] \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & *(-0) - (+0)*(+0) - (+0)*(-0) - (-0)*(-0) - (+0)*(+0) - (+0)* \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 \end{aligned}$$

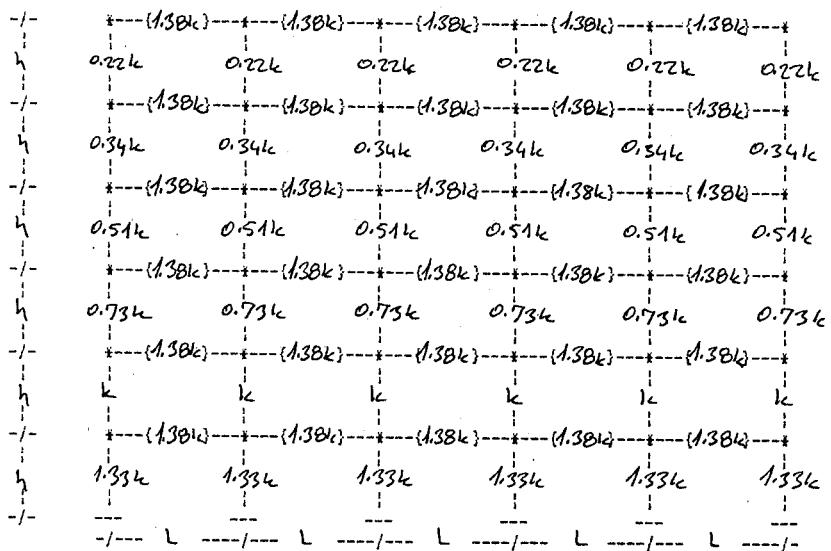
$$\begin{aligned}
 & *{-111} *{-322} *{+273} *{+79} *{-67} *{-19} *{+17} *{+5} *{-4} *{-8} \\
 [ +11] & \quad [ +49] \quad [ -12] \quad [ +3] \quad [ -1] \quad [ +0] \\
 [ +51] & \quad [ +24] \quad [ -5] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *{-41} *{-23} *{-1} *{+2} *{+3} *{+0} *{-1} *{-0} *{+0} *{-0} \\
 [ -10] & \quad [ -1] \quad [ +1] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -4] & \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *{+3} *{+1} *{-1} *{-0} *{-0} *{+0} *{+0} *{-0} *{-0} *{+0} \\
 [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & *{-0} *{-0} *{+0} *{+0} *{-0} *{-0} *{-0} *{+0} *{+0} *{-0} \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *{+0} *{+0} *{-0} *{-0} *{+0} *{+0} *{-0} *{-0} *{-0} *{+0} \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 [ +0] & \quad [ -0] \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \\
 \end{aligned}$$

$$\begin{aligned}
 & *{+138} *{+647} *{-663} *{-481} *{+409} *{+118} *{-101} *{-28} *{+23} *{+2} \\
 [ -138] & \quad [ +15] \quad [ +72] \quad [ -17] \quad [ +4] \quad [ -2] \\
 [ -63] & \quad [ +6] \quad [ +34] \quad [ -8] \quad [ +2] \quad [ -1] \\
 & *{+50} *{+16} *{-19} *{-20} *{-11} *{+0} *{+6} *{+1} *{-2} *{+0} \\
 [ +13] & \quad [ -3] \quad [ -3] \quad [ +2] \quad [ -1] \quad [ +0] \\
 [ +6] & \quad [ -1] \quad [ -2] \quad [ +1] \quad [ -0] \quad [ +0] \\
 & *{-4} *{-1} *{+2} *{+1} *{+0} *{-0} *{-0} *{+0} *{+0} *{-0} \\
 [ -2] & \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -1] & \quad [ +0] \quad [ +0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 & *{+0} *{+0} *{-0} *{-0} *{+0} *{+0} *{+0} *{-0} *{-0} *{+0} \\
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 [ +0] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\
 & *{-0} *{-0} *{+0} *{+0} *{-0} *{-0} *{-0} *{+0} *{+0} *{-0} \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \\
 [ -0] & \quad [ +0] \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0]
 \end{aligned}$$

5 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned}
 & *(-34) - (-405)*(+485) - (+747)*(-748) - (-504)*(+429) - (+119)*(-100) - (-8)* \\
 & [ +34] \quad [-79] \quad [ +1] \quad [ +76] \quad [ -19] \quad [ +8] \\
 & [ +14] \quad [-37] \quad [ +8] \quad [ +36] \quad [ -9] \quad [ +3] \\
 & *(-10) - (+11)*(+21) - (+10)*(-10) - (-18)*(-13) - (+8)*(+6) - (-2)* \\
 & [ -5] \quad [ +5] \quad [ -8] \quad [ -41] \quad [ +2] \quad [ -2] \\
 & [ -2] \quad [ +2] \quad [ -8] \quad [ -2] \quad [ +1] \quad [ -1] \\
 & *(+13) - (-8)*(-1) - (-1)*(+1) - (+1)*(+1) - (-8)*(-8) - (+8)* \\
 & [ +1] \quad [ -1] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & [ +8] \quad [ -8] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & *(-8) - (+8)*(+8) - (+8)*(-8) - (-8)*(-8) - (+8)*(+8) - (-8)* \\
 & [ -8] \quad [ +8] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & [ -8] \quad [ +8] \quad [ -8] \quad [ -8] \quad [ +8] \quad [ -8] \\
 & *(+8) - (-8)*(-8) - (-8)*(+8) - (+8)*(+8) - (-8)*(-8) - (+8)* \\
 & [ +8] \quad [ -8] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8] \\
 & [ +8] \quad [ -8] \quad [ +8] \quad [ +8] \quad [ -8] \quad [ +8]
 \end{aligned}$$

## SISTEM GEOMETRİK ÖZELLİKLERİ



1 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-150)-----(-343)*(+272)-----(+81)*(-65)-----(-19)*(+15)-----(+4)*(-4)-----(-0)* \\ & [ +150] \quad [ +71] \quad [ -16] \quad [ +4] \quad [ -1] \quad [ +0] \\ & [ +137] \quad [ +70] \quad [ -15] \quad [ +3] \quad [ -1] \quad [ +0] \\ & *(-324)-----(-442)*(+265)-----(+88)*(-53)-----(-18)*(+10)-----(+3)*(-2)-----(-0)* \\ & [ +187] \quad [ +107] \quad [ -21] \quad [ +4] \quad [ -1] \quad [ +0] \\ & [ +177] \quad [ +104] \quad [ -19] \quad [ +4] \quad [ -1] \quad [ +0] \\ & *(-413)-----(-501)*(+249)-----(+88)*(-44)-----(-16)*(+8)-----(+3)*(-1)-----(-0)* \\ & [ +236] \quad [ +148] \quad [ -25] \quad [ +4] \quad [ -1] \quad [ +0] \\ & [ +222] \quad [ +143] \quad [ -23] \quad [ +4] \quad [ -1] \quad [ +0] \\ & *(-500)-----(-563)*(+230)-----(+86)*(-35)-----(-13)*(+5)-----(+2)*(-1)-----(-0)* \\ & [ +278] \quad [ +190] \quad [ -28] \quad [ +4] \quad [ -1] \quad [ +0] \\ & [ +259] \quad [ +182] \quad [ -25] \quad [ +3] \quad [ -0] \quad [ +0] \\ & *(-585)-----(-627)*(+207)-----(+82)*(-27)-----(-11)*(+3)-----(+1)*(-0)-----(-0)* \\ & [ +326] \quad [ +237] \quad [ -30] \quad [ +4] \quad [ -0] \quad [ +0] \\ & [ +321] \quad [ +235] \quad [ -30] \quad [ +4] \quad [ -0] \quad [ +0] \\ & *(-602)-----(-641)*(+200)-----(+80)*(-25)-----(-10)*(+3)-----(+1)*(-0)-----(-0)* \\ & [ +281] \quad [ +206] \quad [ -26] \quad [ +3] \quad [ -0] \quad [ +0] \\ & [ +140] \quad [ +103] \quad [ -13] \quad [ +2] \quad [ -0] \quad [ +0] \\ & --- \quad --- \quad --- \quad --- \quad --- \quad --- \end{aligned}$$

1 .inci kat 2 .inci kolonun cokmesi hali

\*{+184}-----{+662}\*{-680}-----{-500}\*{+399}-----{+118}\*{ -95}-----{ -27}\*{ +223}-----{ +2}\*  
[ -184] [ +18] [ +101] [ -23] [ +5] [ -2]  
  
[ -166] [ +14] [ +96] [ -21] [ +5] [ -2]  
\*{+389}-----{+729}\*{-759}-----{-587}\*{+351}-----{+117}\*{ -70}-----{ -23}\*{ +13}-----{ +3}\*  
[ -223] [ +15] [ +140] [ -27] [ +5] [ -2]  
  
[ -210] [ +13] [ +135] [ -25] [ +5] [ -1]  
\*{+486}-----{+766}\*{-795}-----{-637}\*{+317}-----{+112}\*{ -56}-----{ -20}\*{ +10}-----{ +3}\*  
[ -276] [ +15] [ +185] [ -31] [ +5] [ -1]  
  
[ -258] [ +13] [ +177] [ -29] [ +5] [ -1]  
\*{+577}-----{+803}\*{-829}-----{-686}\*{+281}-----{+105}\*{ -43}-----{ -16}\*{ +6}-----{ +2}\*  
[ -319] [ +13] [ +229] [ -33] [ +5] [ -1]  
  
[ -295] [ +11] [ +217] [ -30] [ +4] [ -1]  
\*{+662}-----{+839}\*{-860}-----{-736}\*{+242}-----{ +96}\*{ -31}-----{ -12}\*{ +4}-----{ +1}\*  
[ -367] [ +11] [ +277] [ -35] [ +4] [ -1]  
  
[ -361] [ +11] [ +274] [ -34] [ +4] [ -1]  
\*{+677}-----{+846}\*{-866}-----{-746}\*{+233}-----{ +93}\*{ -29}-----{ -12}\*{ +4}-----{ +1}\*  
[ -316] [ +9] [ +240] [ -30] [ +4] [ -1]  
  
[ -158] [ +5] [ +120] [ -15] [ +2] [ -0]  
--- --- --- --- --- ---

1 .inci kat 3 .inci kolonun cokmesi hali

$*(-42) - (-395)*(+504) - (+756)*(-757) - (-522)*(+416) - (+119)*(-94) - (-10)*$						
[ +42]	[ -110]	[ +1]	[ +105]	[ -25]	[ +10]	
[ +36]	[ -103]	[ +1]	[ +99]	[ -22]	[ +8]	
$*(-78) - (-345)*(+593) - (+798)*(-799) - (-600)*(+358) - (+118)*(-69) - (-16)*$						
[ +43]	[ -146]	[ +1]	[ +143]	[ -28]	[ +8]	
[ +39]	[ -140]	[ +0]	[ +137]	[ -26]	[ +7]	
$*(-86) - (-312)*(+642) - (+822)*(-822) - (-646)*(+322) - (+113)*(-55) - (-15)*$						
[ +47]	[ -190]	[ +0]	[ +188]	[ -32]	[ +8]	
[ +42]	[ -181]	[ +0]	[ +179]	[ -29]	[ +7]	
$*(-89) - (-277)*(+690) - (+845)*(-846) - (-693)*(+283) - (+106)*(-43) - (-14)*$						
[ +47]	[ -232]	[ +0]	[ +238]	[ -34]	[ +7]	
[ +41]	[ -220]	[ +0]	[ +218]	[ -30]	[ +6]	
$*(-87) - (-239)*(+739) - (+870)*(-870) - (-740)*(+243) - (+97)*(-31) - (-11)*$						
[ +46]	[ -280]	[ +0]	[ +279]	[ -36]	[ +6]	
[ +45]	[ -276]	[ +0]	[ +275]	[ -35]	[ +6]	
$*(-85) - (-231)*(+749) - (+875)*(-875) - (-750)*(+234) - (+94)*(-29) - (-11)*$						
[ +39]	[ -242]	[ +0]	[ +241]	[ -30]	[ +5]	
[ +20]	[ -121]	[ +0]	[ +120]	[ -15]	[ +2]	
---	---	---	---	---	---	---

2 .inci kat 1 .inci kolonun cokmesi hali

\*(-150)-----(-343)\*(+272)-----(+81)\*(-65)-----(-19)\*(+15)-----(+4)\*(-4)-----(-8)\*  
[ +150] [ +71] [ -16] [ +4] [ -1] [ +0]  
[ +137] [ +70] [ -15] [ +3] [ -1] [ +0]  
\*(-324)-----(-442)\*(+265)-----(+88)\*(-53)-----(-18)\*(+10)-----(+3)\*(-2)-----(-8)\*  
[ +187] [ +107] [ -21] [ +4] [ -1] [ +0]  
[ +177] [ +104] [ -19] [ +4] [ -1] [ +0]  
\*(-413)-----(-501)\*(+249)-----(+88)\*(-44)-----(-16)\*(+8)-----(+3)\*(-1)-----(-8)\*  
[ +235] [ +147] [ -25] [ +4] [ -1] [ +0]  
[ +220] [ +143] [ -23] [ +4] [ -1] [ +0]  
\*(-508)-----(-567)\*(+230)-----(+87)\*(-35)-----(-13)\*(+5)-----(+2)\*(-1)-----(-8)\*  
[ +288] [ +195] [ -29] [ +4] [ -1] [ +0]  
[ +284] [ +192] [ -29] [ +4] [ -1] [ +0]  
\*(-525)-----(-582)\*(+223)-----(+85)\*(-33)-----(-12)\*(+5)-----(+2)\*(-1)-----(-8)\*  
[ +241] [ +167] [ -23] [ +3] [ -0] [ +0]  
[ +96] [ +74] [ -8] [ +1] [ -0] [ +0]  
\*(-54)-----(-41)\*(-15)-----(-3)\*(+5)-----(+2)\*(-1)-----(-8)\*(+0)-----(+8)\*  
[ -43] [ -18] [ +6] [ -1] [ +8] [ -8]  
[ -21] [ -9] [ +3] [ -1] [ +0] [ -8]  
---

2 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *(+184) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-184] & [ +18] & [ +101] & [ -23] & [ +5] & [ -2] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-166] & [ +14] & [ +96] & [ -21] & [ +5] & [ -2] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ *(+389) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-223] & [ +15] & [ +140] & [ -27] & [ +5] & [ -2] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-210] & [ +14] & [ +135] & [ -25] & [ +5] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ *(+485) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-275] & [ +15] & [ +185] & [ -31] & [ +5] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-255] & [ +12] & [ +176] & [ -28] & [ +5] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ *(+586) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-331] & [ +14] & [ +235] & [ -35] & [ +5] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-326] & [ +14] & [ +233] & [ -35] & [ +5] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ *(+601) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-275] & [ +11] & [ +200] & [ -28] & [ +4] & [ -1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-107] & [ +2] & [ +84] & [ -9] & [ +1] & [ -0] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ *(+53) & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-54] & [ -5] & [ -28] & [ +8] & [ -2] & [ +1] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ [-27] & [ -3] & [ -14] & [ +4] & [ -1] & [ +0] & \cdots \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \end{array}$$

2 .inci kat 3 .inci kolonun cokmesi hali

$*(-42) - (-395)(+504) - (+756)(-757) - (-522)(+416) - (+119)(-94) - (-10)*$						
[ +42]	[ -110]	[ +1]	[ +105]	[ -25]	[ +10]	
[ +36]	[ -103]	[ +1]	[ +99]	[ -22]	[ +8]	
$*(-79) - (-345)(+593) - (+798)(-799) - (-600)(+358) - (+118)(-69) - (-16)*$						
[ +43]	[ -146]	[ +1]	[ +143]	[ -28]	[ +8]	
[ +39]	[ -140]	[ +0]	[ +137]	[ -26]	[ +7]	
$*(-85) - (-312)(+641) - (+821)(-822) - (-646)(+322) - (+113)(-55) - (-15)*$						
[ +47]	[ -190]	[ +0]	[ +187]	[ -32]	[ +8]	
[ +41]	[ -180]	[ +0]	[ +178]	[ -29]	[ +7]	
$*(-90) - (-275)(+694) - (+847)(-848) - (-696)(+201) - (+186)(-41) - (-14)*$						
[ +49]	[ -239]	[ +0]	[ +237]	[ -36]	[ +7]	
[ +49]	[ -237]	[ +0]	[ +235]	[ -35]	[ +7]	
$*(-87) - (-265)(+705) - (+853)(-853) - (-707)(+271) - (+103)(-39) - (-13)*$						
[ +59]	[ -203]	[ +0]	[ +201]	[ -28]	[ +6]	
[ +12]	[ -85]	[ +0]	[ +84]	[ -9]	[ +1]	
$*(+2) - (+24)(+31) - (+15)(-15) - (-30)(-26) - (-6)(+7) - (+2)*$						
[ -13]	[ +30]	[ -0]	[ -29]	[ +8]	[ -3]	
[ -7]	[ +15]	[ -0]	[ -14]	[ +4]	[ -11]	

3 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{array}{ccccccccc} *(-150) & ----- & (-343)*(+272) & ----- & (+81)*(-65) & ----- & (-19)*(+15) & ----- & (+4)*(-4) & ----- & (-0)* \\ \hline [ +150] & & [ +71] & & [ -16] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ [ +137] & & [ +70] & & [ -15] & & [ +3] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ *(-324) & ----- & (-441)*(+265) & ----- & (+88)*(-53) & ----- & (-18)*(+11) & ----- & (+3)*(-2) & ----- & (-0)* \\ \hline [ +187] & & [ +107] & & [ -21] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ [ +176] & & [ +104] & & [ -19] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ *(-419) & ----- & (-584)*(+258) & ----- & (+89)*(-44) & ----- & (-16)*(+8) & ----- & (+3)*(-1) & ----- & (-0)* \\ \hline [ +243] & & [ +150] & & [ -26] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ [ +238] & & [ +148] & & [ -25] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ *(-447) & ----- & (-526)*(+242) & ----- & (+88)*(-41) & ----- & (-15)*(+7) & ----- & (+2)*(-1) & ----- & (-0)* \\ \hline [ +209] & & [ +135] & & [ -22] & & [ +4] & & [ -1] & & [ +0] \\ & & & & & & & & & & & \\ [ +86] & & [ +62] & & [ -8] & & [ +1] & & [ -0] & & [ +0] \\ & & & & & & & & & & & \\ *(-54) & ----- & (-39)*(-12) & ----- & (-1)*(+5) & ----- & (+1)*(-1) & ----- & (-0)*(+0) & ----- & (+0)* \\ \hline [ -32] & & [ -11] & & [ +4] & & [ -1] & & [ +0] & & [ -0] \\ & & & & & & & & & & & \\ [ -12] & & [ -5] & & [ +2] & & [ -0] & & [ +0] & & [ -0] \\ & & & & & & & & & & & \\ *(+7) & ----- & (+4)*(+0) & ----- & (-0)*(-1) & ----- & (-0)*(+0) & ----- & (+0)*(-0) & ----- & (-0)* \\ \hline [ +6] & & [ +1] & & [ -1] & & [ +0] & & [ -0] & & [ +0] \\ & & & & & & & & & & & \\ [ +3] & & [ +0] & & [ -0] & & [ +0] & & [ -0] & & [ +0] \\ \hline \hline \end{array}$$

3 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *(+184) & ----- & \{+662\} *(-680) & ----- & \{-500\} *(+399) & ----- & \{+118\} *(\ -95) & ----- & \{ -27\} *(\ +22) & ----- & \{ +2\} * \\ [-184] & & [ +18] & & [ +101] & & [ -23] & & [ +5] & & [ -2] \\ & & | & & | & & | & & | & & | \\ [-167] & & [ +15] & & [ +96] & & [ -21] & & [ +5] & & [ -2] \\ & & | & & | & & | & & | & & | \\ *(+389) & ----- & \{+729\} *(-759) & ----- & \{-587\} *(+351) & ----- & \{+117\} *(\ -70) & ----- & \{ -23\} *(\ +13) & ----- & \{ +3\} * \\ [-222] & & [ +15] & & [ +140] & & [ -27] & & [ +5] & & [ -1] \\ & & | & & | & & | & & | & & | \\ [-208] & & [ +13] & & [ +134] & & [ -25] & & [ +5] & & [ -1] \\ & & | & & | & & | & & | & & | \\ *(+493) & ----- & \{+769\} *(-797) & ----- & \{-639\} *(+316) & ----- & \{+113\} *(\ -55) & ----- & \{ -20\} *(\ +9) & ----- & \{ +3\} * \\ [-284] & & [ +16] & & [ +189] & & [ -33] & & [ +6] & & [ -1] \\ & & | & & | & & | & & | & & | \\ [-279] & & [ +15] & & [ +186] & & [ -32] & & [ +6] & & [ -1] \\ & & | & & | & & | & & | & & | \\ *(+522) & ----- & \{+781\} *(-808) & ----- & \{-656\} *(+303) & ----- & \{+110\} *(\ -51) & ----- & \{ -18\} *(\ +8) & ----- & \{ +2\} * \\ [-243] & & [ +12] & & [ +167] & & [ -27] & & [ +4] & & [ -1] \\ & & | & & | & & | & & | & & | \\ [-98] & & [ +3] & & [ +73] & & [ -18] & & [ +1] & & [ -0] \\ & & | & & | & & | & & | & & | \\ *(+57) & ----- & \{+23\} *(\ -21) & ----- & \{-31\} *(\ -23) & ----- & \{ -4\} *(\ +8) & ----- & \{ +2\} *(\ -2) & ----- & \{ -0\} * \\ [+41] & & [ -5] & & [ -19] & & [ +6] & & [ -2] & & [ +1] \\ & & | & & | & & | & & | & & | \\ [+16] & & [ -2] & & [ -8] & & [ +2] & & [ -1] & & [ +0] \\ & & | & & | & & | & & | & & | \\ *(\ -8) & ----- & \{ -3\} *(\ +3) & ----- & \{ +3\} *(\ +2) & ----- & \{ +0\} *(\ -1) & ----- & \{ -0\} *(\ +0) & ----- & \{ +0\} * \\ [-8] & & [ +1] & & [ +3] & & [ -1] & & [ +0] & & [ -0] \\ & & | & & | & & | & & | & & | \\ [-4] & & [ +1] & & [ +1] & & [ -1] & & [ +0] & & [ -0] \\ & & | & & | & & | & & | & & | \\ --- & & --- & & --- & & --- & & --- & & --- \end{array}$$

3 .inci kat 3 .inci kolonun çökmesi hali

$$\begin{aligned}
 & *(-42) - (-395)*(+504) - (+756)*(-757) - (-522)*(+416) - (+119)*(-94) - (-10)* \\
 & [ +42] \quad [-110] \quad [ +1] \quad [ +105] \quad [ -25] \quad [ +10] \\
 & [ +36] \quad [-103] \quad [ +1] \quad [ +99] \quad [ -22] \quad [ +8] \\
 & \quad *(-78) - (-345)*(+593) - (+798)*(-799) - (-600)*(+358) - (+118)*(-69) - (-16)* \\
 & [ +42] \quad [-145] \quad [ +1] \quad [ +143] \quad [ -28] \quad [ +8] \\
 & [ +38] \quad [-139] \quad [ +0] \quad [ +137] \quad [ -25] \quad [ +7] \\
 & \quad *(-87) - (-311)*(+644) - (+823)*(-824) - (-649)*(+320) - (+113)*(-54) - (-15)* \\
 & [ +49] \quad [-195] \quad [ +0] \quad [ +192] \quad [ -34] \quad [ +8] \\
 & [ +48] \quad [-192] \quad [ +0] \quad [ +189] \quad [ -33] \quad [ +8] \\
 & \quad *(-87) - (-298)*(+661) - (+831)*(-832) - (-665)*(+306) - (+110)*(-50) - (-15)* \\
 & [ +39] \quad [-171] \quad [ +0] \quad [ +169] \quad [ -28] \quad [ +6] \\
 & [ +13] \quad [-73] \quad [ +0] \quad [ +73] \quad [ -10] \quad [ +2] \\
 & \quad *(-2) - (+22)*(+30) - (+15)*(-15) - (-29)*(-24) - (-5)*(+8) - (-1)* \\
 & [ -11] \quad [ +21] \quad [ -0] \quad [ -20] \quad [ +7] \quad [ -3] \\
 & [ -4] \quad [ +9] \quad [ -0] \quad [ -8] \quad [ +2] \quad [ -1] \\
 & \quad *(+1) - (-2)*(-3) - (-2)*(+2) - (+3)*(+2) - (+0)*(-1) - (-0)* \\
 & [ +3] \quad [ -3] \quad [ +0] \quad [ +3] \quad [ -1] \quad [ +1] \\
 & [ +1] \quad [ -2] \quad [ +0] \quad [ +1] \quad [ -1] \quad [ +0] \\
 & --- \quad --- \quad --- \quad --- \quad --- \quad ---
 \end{aligned}$$

4 .inci kat 1 .inci kolonun çökmesi hali

\*{-150}-----{-343}\*{+272}-----{ +81}\*{ -65}-----{ -19}\*{ +15}-----{ +4}\*{ -4}-----{ -0}\*

[ +150] [ +71] [ -16] [ +4] [ -1] [ +0]

[ +136] [ +70] [ -15] [ +3] [ -1] [ +0]

\*{-328}-----{-443}\*{+265}-----{ +89}\*{ -53}-----{ -18}\*{ +10}-----{ +3}\*{ -2}-----{ -0}\*

[ +192] [ +108] [ -21] [ +4] [ -1] [ +0]

[ +188] [ +107] [ -21] [ +4] [ -1] [ +0]

\*{-363}-----{-468}\*{+258}-----{ +88}\*{ -49}-----{ -17}\*{ +9}-----{ +3}\*{ -2}-----{ -0}\*

[ +175] [ +103] [ -19] [ +3] [ -1] [ +0]

[ +75] [ +49] [ -8] [ +1] [ -0] [ +0]

\*{ -52}-----{ -34}\*{ -8}-----{ +0}\*{ +5}-----{ +1}\*{ -2}-----{ -0}\*{ +0}-----{ +0}\*

[ -23] [ -6] [ +3] [ -1] [ +0] [ -0]

[ -9] [ -3] [ +1] [ -0] [ +0] [ -0]

\*{ +6}-----{ +3}\*{ -0}-----{ -0}\*{ -0}-----{ -0}\*{ +0}-----{ +0}\*{ -0}-----{ +0}\*

[ +4] [ +0] [ -0] [ +0] [ -0] [ +0]

[ +1] [ +0] [ -0] [ +0] [ -0] [ +0]

\*{ -1}-----{ -0}\*{ +0}-----{ +0}\*{ +0}-----{ -0}\*{ -0}-----{ -0}\*{ +0}-----{ -0}\*

[ -1] [ +0] [ +0] [ -0] [ +0] [ -0]

[ -0] [ +0] [ +0] [ -0] [ +0] [ -0]

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4 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{aligned} & *(+184) - \{ +62\} *(-680) - \{ -500\} *(+399) - \{ +118\} *(-95) - \{ -27\} *(+22) - \{ +2\} * \\ [-184] & \quad [ +18] \quad [ +101] \quad [ -23] \quad [ +5] \quad [ -2] \\ & *(+394) - \{ +731\} *(-761) - \{ -589\} *(+350) - \{ +118\} *(-69) - \{ -23\} *(+13) - \{ +3\} * \\ [-166] & \quad [ +14] \quad [ +96] \quad [ -20] \quad [ +5] \quad [ -2] \\ & *(+431) - \{ +746\} *(-774) - \{ -609\} *(+336) - \{ +115\} *(-64) - \{ -22\} *(+12) - \{ +3\} * \\ [-229] & \quad [ +16] \quad [ +142] \quad [ -28] \quad [ +5] \quad [ -2] \\ & *(+13) - \{ +13\} \quad [ +133] \quad [ -24] \quad [ +5] \quad [ -1] \\ & *(+56) - \{ +21\} *(-21) - \{ -28\} *(-19) - \{ -3\} *(+8) - \{ +2\} *(-2) - \{ -0\} * \\ [-87] & \quad [ +4] \quad [ +60] \quad [ -10] \quad [ +2] \quad [ -0] \\ & *(-7) - \{ -2\} *(+3) - \{ +3\} *(+1) - \{ -0\} *(-1) - \{ -0\} *(+0) - \{ +0\} * \\ [ +30] & \quad [ -4] \quad [ -12] \quad [ +5] \quad [ -1] \quad [ +1] \\ & *(+2) - \{ -2\} \quad [ -5] \quad [ +2] \quad [ -0] \quad [ +0] \\ & *(+1) - \{ +0\} *(-0) - \{ -0\} *(-0) - \{ +0\} *(+0) - \{ +0\} *(-0) - \{ +0\} * \\ [-5] & \quad [ +1] \quad [ +1] \quad [ -1] \quad [ +0] \quad [ -0] \\ & *(-2) - \{ +0\} \quad [ +1] \quad [ -0] \quad [ +0] \quad [ -0] \\ & *(+1) - \{ +0\} *(-0) - \{ -0\} *(-0) - \{ +0\} *(+0) - \{ +0\} *(-0) - \{ +0\} * \\ [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\ [ +1] & \quad [ -0] \quad [ -0] \quad [ +0] \quad [ -0] \quad [ +0] \\ \hline \end{aligned}$$

4 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} & *(-42) & -(-395)*(+504) & -(+756)*(-757) & -(-522)*(+416) & -(+119)*(-94) & -(-10)* \\ \boxed{[-42]} & \boxed{[-110]} & \boxed{[+1]} & \boxed{[+105]} & \boxed{[-25]} & \boxed{[+10]} & \\ \boxed{[+35]} & \boxed{[-102]} & \boxed{[+1]} & \boxed{[+99]} & \boxed{[-22]} & \boxed{[+8]} & \\ & *(-80) & -(-344)*(+595) & -(+799)*(-800) & -(-602)*(+357) & -(+119)*(-68) & -(-16)* \\ \boxed{[+44]} & \boxed{[-149]} & \boxed{[+1]} & \boxed{[+146]} & \boxed{[-29]} & \boxed{[+9]} & \\ \boxed{[+43]} & \boxed{[-146]} & \boxed{[+1]} & \boxed{[+143]} & \boxed{[-28]} & \boxed{[+8]} & \\ & *(-81) & -(-330)*(+614) & -(+808)*(-809) & -(-621)*(+342) & -(+116)*(-63) & -(-15)* \\ \boxed{[+38]} & \boxed{[-138]} & \boxed{[+0]} & \boxed{[+135]} & \boxed{[-25]} & \boxed{[+7]} & \\ \boxed{[+14]} & \boxed{[-61]} & \boxed{[+0]} & \boxed{[+60]} & \boxed{[-10]} & \boxed{[+2]} & \\ & *(-5) & -(+19)*(+28) & -(+14)*(-14) & -(-26)*(-21) & -(-3)*(+8) & -(+0)* \\ \boxed{[-9]} & \boxed{[+14]} & \boxed{[-0]} & \boxed{[-13]} & \boxed{[+5]} & \boxed{[-2]} & \\ \boxed{[-3]} & \boxed{[+6]} & \boxed{[-0]} & \boxed{[-6]} & \boxed{[+2]} & \boxed{[-1]} & \\ & *(+1) & -(-1)*(-3) & -(-1)*(+1) & -(+2)*(+2) & -(-0)*(-1) & -(+0)* \\ \boxed{[+2]} & \boxed{[-2]} & \boxed{[+0]} & \boxed{[+2]} & \boxed{[-1]} & \boxed{[+1]} & \\ \boxed{[+1]} & \boxed{[-1]} & \boxed{[+0]} & \boxed{[+1]} & \boxed{[-0]} & \boxed{[+0]} & \\ & *(-0) & -(+0)*(+0) & -(+0)*(-0) & -(-0)*(-0) & -(+0)*(+0) & -(-0)* \\ \boxed{[-0]} & \boxed{[+0]} & \boxed{[-0]} & \boxed{[-0]} & \boxed{[+0]} & \boxed{[-0]} & \\ \boxed{[-0]} & \boxed{[+0]} & \boxed{[-0]} & \boxed{[-0]} & \boxed{[+0]} & \boxed{[-0]} & \\ \hline & \hline & \hline & \hline & \hline & \hline & \hline \end{array}$$

5 .inci kat 1 .inci kolonun cokmesi hali

\*{ -153}-----{-344}\*{+273}-----{ +81}\*{ -85}-----{ -19}\*{ +15}-----{ +4}\*{ -3}-----{ -0}\*  
[ +153] [ +72] [ -16] [ +4] [ -1] [ +0]  
  
[ +143] [ +71] [ -16] [ +3] [ -1] [ +0]  
  \*{ -279}-----{-414}\*{+269}-----{ +87}\*{ -57}-----{ -18}\*{ +12}-----{ +4}\*{ -2}-----{ -0}\*  
[ +136] [ +74] [ -15] [ +3] [ -1] [ +0]  
  
[ +60] [ +36] [ -7] [ +1] [ -0] [ +0]  
  \*{ -46}-----{ -28}\*{ -5}-----{ +1}\*{ +4}-----{ +1}\*{ -1}-----{ -0}\*{ +0}-----{ +0}\*  
[ -15] [ -3] [ +2] [ -1] [ +0] [ -0]  
  
[ -6] [ -1] [ +1] [ -0] [ +0] [ -0]  
  \*{ +4}-----{ +2}\*{ -0}-----{ -0}\*{ -0}-----{ +0}\*{ +0}-----{ +0}\*{ -0}-----{ +0}\*  
[ +2] [ -0] [ -0] [ +0] [ -0] [ +0]  
  
[ +1] [ -0] [ -0] [ +0] [ -0] [ +0]  
  \*{ -0}-----{ -0}\*{ +0}-----{ +0}\*{ +0}-----{ -0}\*{ -0}-----{ +0}\*{ +0}-----{ -0}\*  
[ -0] [ +0] [ +0] [ -0] [ +0] [ -0]  
  
[ -0] [ +0] [ +0] [ -0] [ +0] [ -0]  
  \*{ +0}-----{ +0}\*{ -0}-----{ -0}\*{ +0}-----{ +0}\*{ +0}-----{ -0}\*{ -0}-----{ +0}\*  
[ +0] [ -0] [ +0] [ +0] [ -0] [ +0]  
  
[ +0] [ -0] [ +0] [ +0] [ -0] [ +0]  
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5 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{ccccccc} *(+188) & ----- & (+663)*(-682) & ----- & (-501)*(+399) & ----- & (+118)*(-95) & ----- & (-27)*(+21) & ----- & (+2)* \\ \boxed{-188} & & \boxed{+19} & & \boxed{+103} & & \boxed{-24} & & \boxed{+6} & & \boxed{-2} \\ \boxed{-175} & & \boxed{+16} & & \boxed{+99} & & \boxed{-22} & & \boxed{+5} & & \boxed{-2} \\ *(+339) & ----- & (+711)*(-740) & ----- & (-564)*(+366) & ----- & (+119)*(-76) & ----- & (-24)*(+15) & ----- & (+3)* \\ \boxed{-164} & & \boxed{+13} & & \boxed{+99} & & \boxed{-20} & & \boxed{+4} & & \boxed{-1} \\ \boxed{-71} & & \boxed{+4} & & \boxed{+46} & & \boxed{-9} & & \boxed{+2} & & \boxed{-8} \\ *(+52) & ----- & (+18)*(-19) & ----- & (-24)*(-15) & ----- & (-1)*(+7) & ----- & (+1)*(-2) & ----- & (-8)* \\ \boxed{+20} & & \boxed{-3} & & \boxed{-7} & & \boxed{+3} & & \boxed{-1} & & \boxed{+8} \\ \boxed{+8} & & \boxed{-1} & & \boxed{-3} & & \boxed{+1} & & \boxed{-8} & & \boxed{+3} \\ *(-5) & ----- & (-2)*(+2) & ----- & (+2)*(+1) & ----- & (-8)*(-1) & ----- & (-8)*(+8) & ----- & (-8)* \\ \boxed{-3} & & \boxed{+1} & & \boxed{+1} & & \boxed{-8} & & \boxed{+8} & & \boxed{-8} \\ \boxed{-1} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ *(+1) & ----- & (+0)*(-0) & ----- & (-0)*(-0) & ----- & (+0)*(+0) & ----- & (-0)*(-0) & ----- & (+0)* \\ \boxed{+1} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ \boxed{+0} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ *(-0) & ----- & (-0)*(+0) & ----- & (+0)*(-0) & ----- & (-0)*(-0) & ----- & (+0)*(+0) & ----- & (-0)* \\ \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ \hline \end{array}$$

5 .inci kat 3 .inci kolonun çökmesi hali

$*(-43) - (-394)*(+506) - (+757)*(-758) - (-523)*(+416) - (+119)*(-94) - (-10)*$   
[ +43] [ -111] [ +1] [ +107] [ -26] [ +10]  
[ +39] [ -106] [ +1] [ +103] [ -23] [ +8]  
 $*(-72) - (-359)*(+570) - (+787)*(-788) - (-579)*(+375) - (+120)*(-75) - (-15)*$   
[ +33] [ -104] [ +0] [ +101] [ -21] [ +7]  
[ +13] [ -47] [ +0] [ +47] [ -9] [ +2]  
 $*(-7) - (+15)*(+24) - (+12)*(-11) - (-22)*(-17) - (-1)*(+7) - (-1)*$   
[ -7] [ +9] [ -8] [ -8] [ +3] [ -2]  
[ -3] [ +4] [ -8] [ -3] [ +1] [ -1]  
 $*(+1) - (-1)*(-2) - (-1)*(+1) - (+2)*(+1) - (-0)*(-1) - (+0)*$   
[ +1] [ -1] [ +0] [ +1] [ -1] [ +0]  
[ +0] [ -0] [ +0] [ +0] [ -0] [ +0]  
 $*(-0) - (+0)*(+0) - (+0)*(-0) - (-0)*(-0) - (+0)*(+0) - (-0)*$   
[ -0] [ +0] [ -0] [ -0] [ +0] [ -0]  
[ -0] [ +0] [ -0] [ -0] [ +0] [ -0]  
 $*(+0) - (-0)*(-0) - (-0)*(+0) - (+0)*(+0) - (-0)*(-0) - (-0)*(+0)*$   
[ +0] [ -0] [ +0] [ +0] [ -0] [ +0]  
[ +0] [ -0] [ +0] [ +0] [ -0] [ +0]

6 .inci kat 1 .inci kolonun cokmesi hali

$$\begin{aligned} & *{-111} \cdots (-322) * (+273) \cdots (+79) * (+67) \cdots (-19) * (+17) \cdots (+5) * (-4) \cdots (-3) * \\ & [ +11] [ +49] [-12] [ +3] [-1] [ +0] \\ & [ +51] [ +24] [-5] [ +1] [-0] [ +0] \\ & *(-41) \cdots (-23) * (-1) \cdots (+2) * (+3) \cdots (+8) * (-1) \cdots (-0) * (+0) \cdots (-0) * \\ & [ -10] [ -1] [ +1] [ -0] [ +0] [ -0] \\ & [ -4] [ -0] [ +0] [ -0] [ +0] [ -0] \\ & *(+3) \cdots (+1) * (-1) \cdots (-0) * (-0) \cdots (+0) * (+0) \cdots (-0) * (-0) \cdots (+0) * \\ & [ +1] [ -0] [ -0] [ +0] [ -0] [ +0] \\ & [ +0] [ -0] [ -0] [ +0] [ -0] [ +0] \\ & *(-0) \cdots (-0) * (+0) \cdots (+0) * (-0) \cdots (-0) * (-0) \cdots (+0) * (+0) \cdots (-0) * \\ & [ -0] [ +0] [ -0] [ -0] [ +0] [ -0] \\ & [ -0] [ +0] [ -0] [ -0] [ +0] [ -0] \\ & *(+0) \cdots (+0) * (-0) \cdots (-0) * (+0) \cdots (+0) * (-0) \cdots (-0) * (-0) \cdots (+0) * \\ & [ +0] [ -0] [ +0] [ -0] [ -0] [ +0] \\ & [ +0] [ -0] [ +0] [ +0] [ -0] [ +0] \\ & *(-0) \cdots (-0) * (+0) \cdots (+0) * (-0) \cdots (-0) * (+0) \cdots (+0) * (-0) \cdots (-0) * \\ & [ -0] [ +0] [ -0] [ +0] [ +0] [ -0] \\ & [ -0] [ +0] [ -0] [ +0] [ +0] [ -0] \\ & \dots \dots \dots \dots \dots \dots \end{aligned}$$

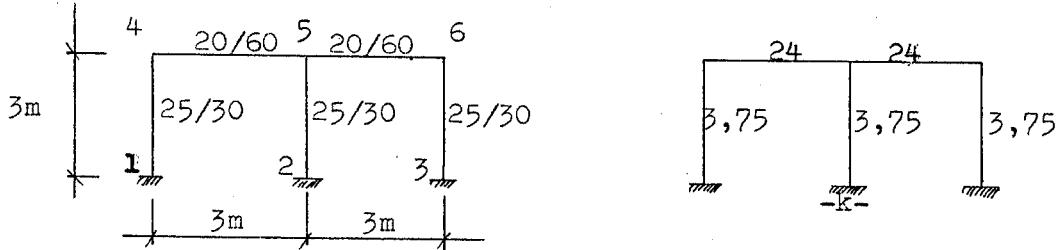
6 .inci kat 2 .inci kolonun cokmesi hali

$$\begin{array}{cccccc} *(+138) & ----- & (+647)*(-663) & ----- & (-461)*(+409) & ----- & (+118)*(-101) & ----- & (-28)*(+23) & ----- & (+2)* \\ \boxed{-138} & & \boxed{+15} & & \boxed{+72} & & \boxed{-7} & & \boxed{+4} & & \boxed{-2} \\ \boxed{-63} & & \boxed{+6} & & \boxed{+34} & & \boxed{-8} & & \boxed{+2} & & \boxed{-1} \\ *(+50) & ----- & (+16)*(-19) & ----- & (-20)*(-11) & ----- & (+0)*(+6) & ----- & (+1)*(-2) & ----- & (+0)* \\ \boxed{+13} & & \boxed{-3} & & \boxed{-3} & & \boxed{+2} & & \boxed{-1} & & \boxed{+0} \\ \boxed{+6} & & \boxed{-1} & & \boxed{-2} & & \boxed{+1} & & \boxed{-8} & & \boxed{+0} \\ *(-4) & ----- & (-1)*(+2) & ----- & (+1)*(+0) & ----- & (-0)*(-0) & ----- & (+0)*(+0) & ----- & (-0)* \\ \boxed{-2} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ \boxed{-1} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ *(+0) & ----- & (+0)*(-0) & ----- & (-0)*(+0) & ----- & (+0)*(+0) & ----- & (-0)*(-0) & ----- & (+0)* \\ \boxed{+0} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ \boxed{+0} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ *(-0) & ----- & (-0)*(+0) & ----- & (+0)*(-0) & ----- & (-0)*(-0) & ----- & (+0)*(+0) & ----- & (-0)* \\ \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ \boxed{-0} & & \boxed{+0} & & \boxed{-0} & & \boxed{-0} & & \boxed{+0} & & \boxed{-0} \\ *(+0) & ----- & (+0)*(-0) & ----- & (-0)*(+0) & ----- & (+0)*(+0) & ----- & (-0)*(-0) & ----- & (+0)* \\ \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ \boxed{+0} & & \boxed{-0} & & \boxed{+0} & & \boxed{+0} & & \boxed{-0} & & \boxed{+0} \\ \hline & & \hline & & \hline & & \hline & & \hline & & \hline \end{array}$$

6 .inci kat 3 .inci kolonun cokmesi hali

$$\begin{aligned} & *(-34)-----(-405)*(+485)-----(+747)*(-748)-----(-504)*(+429)-----(+119)*(-100)-----(-8)* \\ & [-34] \quad [-79] \quad [+1] \quad [+76] \quad [-19] \quad [+8] \\ & [+14] \quad [-37] \quad [+0] \quad [+36] \quad [-9] \quad [+3] \\ & *(-10)-----(+11)*(+21)-----(+10)*(-10)-----(-18)*(-13)-----(+0)*(+6)-----(-2)* \\ & [-5] \quad [+5] \quad [-0] \quad [-4] \quad [+2] \quad [-2] \\ & [-2] \quad [+2] \quad [-0] \quad [-2] \quad [+1] \quad [-1] \\ & *(+1)-----(-0)*(-1)-----(-1)*(+1)-----(+1)*(+1)-----(-0)*(-0)-----(+0)* \\ & [+1] \quad [-1] \quad [+0] \quad [+0] \quad [-0] \quad [+0] \\ & [+0] \quad [-0] \quad [+0] \quad [+0] \quad [-0] \quad [+0] \\ & *(-0)-----(+0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)*(+0)-----(-0)* \\ & [-0] \quad [+0] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ & [-0] \quad [+0] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ & *(+0)-----(-0)*(-0)-----(-0)*(+0)-----(+0)*(+0)-----(-0)*(-0)-----(+0)* \\ & [+0] \quad [-0] \quad [+0] \quad [+0] \quad [-0] \quad [+0] \\ & [+0] \quad [-0] \quad [+0] \quad [+0] \quad [-0] \quad [+0] \\ & *(-0)-----(-0)*(+0)-----(+0)*(-0)-----(-0)*(-0)-----(+0)*(+0)-----(-0)* \\ & [-0] \quad [+0] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \\ & [-0] \quad [+0] \quad [-0] \quad [-0] \quad [+0] \quad [-0] \end{aligned}$$

ÖRNEK :



orta kolonun bir mm. çökmesi halinde çözüm:

$$\bar{M}_{45} = \bar{M}_{54} = -\bar{M}_{56} = -\bar{M}_{65} = \frac{6 \times 2100000 \times \frac{0,2 \times 0,6^3}{12}}{3^2} \times 0,001 \\ = 5,04 \text{ tm.}$$

$$2(3,75 + 24)\varphi_4 + 24\varphi_5 + 5,04 = 0$$

$$2(24 + 24 + 3,75)\varphi_5 + 24\varphi_4 + 24\varphi_6 = 0$$

$$2(3,75 + 24)\varphi_6 + 24\varphi_5 - 5,04 = 0$$

bu denklem takımı çözülürse;

$$\begin{bmatrix} 55,5 & 24 & 0 \\ 0 & 41,57 & 24 \\ 0 & 24 & 41,57 \end{bmatrix} \begin{bmatrix} \varphi_4 \\ \varphi_5 \\ \varphi_6 \end{bmatrix} = \begin{bmatrix} -5,04 \\ 2,18 \\ 5,04 \end{bmatrix}$$

Simetriden;

$$\varphi_5 = 0$$

$$-\varphi_4 = \varphi_6 = 0,907$$

kolon uç momentleri:

$$M_{41} = 3,75 \times (2 \times 0,0907) + 0 = -0,68 \text{ tm.}$$

$$M_{14} = 3,75 \times (2 \times 0,0907) = -0,34 \text{ tm.}$$

$$M_{63} = -M_{41} = 0,68 \text{ tm.}$$

$$M_{36} = -M_{14} = 0,34 \text{ tm.}$$

$$M_{52} = 3,75 \times (2 \times 0 + 0) + 0 = 0$$

$$M_{25} = 3,75 \times (2 \times 0 + 0) + 0 = 0$$

kiriş uç momentleri;

$$M_{45} = 24x(2x(-0,0907) + 0) + 5,04 = 0,68 \text{ tm.}$$

$$M_{54} = 24x(2x0 - 0,0907) + 0 = 2,18 \text{ tm.}$$

$$M_{65} = -M_{45} = -0,68 \text{ tm.}$$

$$M_{56} = -M_{54} = -2,18 \text{ tm.} \quad \text{bulunur.}$$

Tablo ile çözüm:

$\bar{M}$  5,04 tm. bulunmuştur.

$$\bar{M}^* = \frac{5,04}{1000} = 5,04 \times 10^{-3} \text{ sabit çarpan}$$

1. kat 2. kolonun çökmesi hali tablosundan katsayılar alınır.  
kolonlar

$$M_{41} = \bar{M}^* x (-135) = -0,68 \text{ tm.}$$

$$M_{14} = \bar{M}^* x (-0,68) = -0,34 \text{ tm.}$$

$$M_{63} = \bar{M}^* x 135 = 0,68 \text{ tm.}$$

$$M_{36} = \bar{M}^* x 68 = 0,34 \text{ tm.}$$

$$M_{52} = \bar{M}^* x 0 = 0$$

$$M_{25} = \bar{M}^* x 0 = 0$$

kirişler

$$M_{54} = \bar{M}^* x 568 = 2,86 \text{ tm.}$$

$$M_{45} = \bar{M}^* x 135 = 0,68 \text{ tm.}$$

$$M_{56} = \bar{M}^* x (-568) = -2,86 \text{ tm.}$$

$$M_{65} = \bar{M}^* x (-135) = -0,68 \text{ tm.}$$

bulunur.

SONUÇ :

Örnekten de anlaşıldığı gibi tablolar yeterli hassasiyetle ve çabuklukla hesap yapmayı sağlamaktadır.

Kritik kesitlerin bulunmasında ve zorlamaların belirlenmesinde meslektaşlarımı yararlı olacağı kanısin-dayım.

### BİLGİSAYAR PROGRAMI

Program AMSTRAD CPC 464 bilgisayarı kullanılarak hazırlanmış genel bir programdır. Data giriş sırası önce kolonlar sonra kirişler şeklindedir. İlk olarak kat sayısı ve açıklık sayısı data olarak verilir, daha sonra soldan sağa aşağıdan yukarıya doğru, önce eksene dik sonra eksene paralel kenar boyutu verilir.

Kiriş dataları da aynı yöntem kullanılarak önce  $b$  genişliği daha sonra  $d$  yüksekliği verilir. En sonunda çöken kolonun kat ve sıra numarası verilir.  $l$  mm. lik çökme için üç momentleri hesaplanır ve basılır.

Uzuniukiar m cinsindedir.

```
10 U=0
20 PRINT#U,CHR$(27);";0";:MODE 2
30 REM BIR KOLONUN KISALMASI HALINDE OLUSAN UC
40 REM MOMENTLERinin ACI METODU ile BULUNMASI
50 REM KAT SAYISI ve ACIKLIK SAYISI
60 READ KS,AS:M=AS+2:N=KS*(AS+1)
70 DIM B(KS,AS+1),D(KS,AS+1),B1(KS,AS),D1(KS,AS),L(AS),H(KS),K(N,M),X(N),MA(KS,AS)
80 REM ELASTISITE MODULU
90 EM=2100000
100 REM ACIKLIKLER (m.)
110 FOR I=1 TO AS:READ L(I):NEXT I
120 REM KAT YUKSEKLILERI (m.)
130 FOR I=1 TO KS:READ H(I):NEXT I
140 REM KOLON BOYUTLARI (m.), "ONCE EKSENE DIK KENAR"
150 FOR I=1 TO KS:FOR J=1 TO AS+1:READ B(I,J),D(I,J):NEXT J,I
160 REM KIRIS BOYUTLARI (m.), "ONCE GENISLIK"
170 FOR I=1 TO KS:FOR J=1 TO AS:READ B1(I,J),D1(I,J):NEXT J,I
180 PRINT#U,CHR$(27);";!";CHR$(84);"SISTEM GEOMETRİK ÖZELLİKLERİ":PRINT#U
190 PRINT#U,CHR$(27);";!";CHR$(132)
200 FOR I=KS TO 1 STEP-1
210 PRINT#U," -/-      *";
220 FOR J=1 TO AS:PRINT#U,USING"---(##/##)---*";B1(I,J)*100,D1(I,J)*100::NEXT J
230 PRINT#U:PRINT#U,"   |   ";
240 FOR J=1 TO AS:PRINT#U,"   |   ";NEXT J
250 PRINT#U:PRINT#U,USING" #.##m";h(i);
260 FOR J=1 TO AS+1:PRINT#U,USING" [##/##]   ";B(I,J)*100,D(I,J)*100::NEXT J
270 PRINT#U:PRINT#U,"   |   ";
280 FOR J=1 TO AS:PRINT#U,"   |   ";NEXT J
290 PRINT#U:NEXT I
300 PRINT#U," -/-      ---";
310 FOR J=1 TO AS:PRINT#U,"      ---";NEXT J
320 PRINT#U:PRINT#U,"      -/-";
330 FOR J=1 TO AS:PRINT#U,USING"---#.##m---/-";L(J)::NEXT J
340 PRINT#U:PRINT#U
350 REM RİJİTLİK MATRİSİNİN KURULMASI
360 FOR I=1 TO KS
370 T=(I-1)*(AS+1)
380 FOR J=1 TO AS+1
390 T=T+1
400 K1=EM*B(I,J)*D(I,J)^3/12/H(I)
```

```
410 IF I=KS THEN K2=0:GOTO 430
420 K2=EM*B(I+1,J)*D(I+1,J)^3/12/H(I+1)
430 IF J=1 THEN K3=0:GOTO 450
440 K3=EM*B1(I,J-1)*D1(I,J-1)^3/12/L(J-1)
450 IF J=AS+1 THEN K4=0:GOTO 470
460 K4=EM*B1(I,J)*D1(I,J)^3/12/L(J)
470 K(T,1)=4*(K1+K2+K3+K4)
480 K(T,2)=2*K4
490 K(T,M)=2*K2
500 NEXT J,I
510 REM MESNET COKMESINDEN MEYDANA GELEN
520 REM ANKASTRELIK MOMENTLERİ ve YUK MATRISINE YERLESTIRME
530 READ KATNO,KOLNO
540 PRINT#U,KATNO;".inci kat";KOLNO;".inci kolonun 1mm cokmesi"
550 PRINT#U,"halinde kolon ve kiris uc momentleri"
560 PRINT#U
570 FOR I=KATNO TO KS
580 NOKNO=(I-1)*(AS+1)+KOLNO
590 IF KOLNO=1 THEN 630
600 I1=B1(I,KOLNO-1)*D1(I,KOLNO-1)^3/12
610 M1=6*EM*I1/L(KOLNO-1)^2*0.001
620 X(NOKNO-1)=X(NOKNO-1)-M1
630 X(NOKNO)=X(NOKNO)-M1
640 MA(I,KOLNO-1)=M1
650 IF KOLNO=AS+1 THEN 710
660 I2=B1(I,KOLNO)*D1(I,KOLNO)^3/12
670 M2=6*EM*I2/L(KOLNO)^2*0.001
680 X(NOKNO)=X(NOKNO)+M2
690 X(NOKNO+1)=X(NOKNO+1)+M2
700 MA(I,KOLNO)=-M2
710 NEXT I
720 REM RIJITLIK MATRISININ COZUMU
730 REM CHOLESKY METODU
740 REM SIKISTIRILMIS YARI BAND HALI
750 K(1,1)=SQR(K(1,1))
760 FOR I=2 TO M
770 K(1,I)=K(1,I)/K(1,1)
780 NEXT I
790 X(1)=X(1)/K(1,1)
800 FOR I=2 TO N
```

```
810 T1=I-M+1
820 IF T1<1 THEN T1=1
830 T3=2:T0=0
840 FOR J=I-1 TO T1 STEP -1
850 T0=T0+K(J,T3)^2
860 T3=T3+1
870 NEXT J
880 K(I,1)=SQR(K(I,1)-T0)
890 FOR J=2 TO M-1
900 T3=2:T4=J+1:T0=0
910 FOR J1=I-1 TO T1 STEP -1
920 T0=T0+K(J1,T3)*K(J1,T4)
930 T3=T3+1:T4=T4+1
940 IF T4>M THEN 960
950 NEXT J1
960 K(I,J)=(K(I,J)-T0)/K(I,1)
970 NEXT J
980 K(I,M)=K(I,M)/K(I,1)
990 T3=2:T0=0
1000 FOR J=I-1 TO T1 STEP -1
1010 T0=T0+K(J,T3)*X(J)
1020 T3=T3+1
1030 NEXT J
1040 X(I)=(X(I)-T0)/K(I,1)
1050 NEXT I
1060 REM BILINMIYENLERIN BULUNMASI
1070 FOR I=N TO 1 STEP -1
1080 T1=I:T0=0
1090 FOR J=2 TO M
1100 T1=T1+1
1110 IF T1>N THEN 1140
1120 T0=T0+K(I,J)*X(T1)
1130 NEXT J
1140 X(I)=(X(I)-T0)/K(I,1)
1150 NEXT I
1160 REM KOLON VE KIRIS UC MOMENTLERİ
1170 FOR I=KS TO 1 STEP -1
1180 NOK=(I-1)*(AS+1):NOK2=(I-2)*(AS+1)
1190 REM KIRIS UC MOMENTLERİ
1200 PRINT#U,"      *";FOR J=1 TO AS
```

```
1200 PRINT#U,"      *";:FOR J=1 TO AS
1210 NOK1=NOK+J
1220 K=EM*B1(I,J)*D1(I,J)^3/12/L(J)
1230 MSDL=4*K*(X(NOK1)+0.5*X(NOK1+1))+MA(I,J)
1240 MSAG=4*K*(0.5*X(NOK1)+X(NOK1+1))+MA(I,J)
1250 PRINT#U,USING" [+#.##]---{+.##}*";MSDL,MSAG; .
1260 NEXT J
1270 PRINT#U
1280 REM KOLON UC MOMENTLERİ
1290 PRINT#U,"      ";
1300 FOR J=1 TO AS:PRINT#U,"      ";:NEXT J
1310 PRINT#U
1320 FOR J=1 TO AS+1
1330 NOK1=NOK+J:NOK3=NOK2+J
1340 K=EM*B(I,J)*D(I,J)^3/12/H(I)
1350 IF I=1 THEN 1380
1360 MUST=4*K*(X(NOK1)+0.5*X(NOK3))
1370 GOTO 1390
1380 MUST=4*K*X(NOK1)
1390 PRINT#U,USING" [+#.##]      ";MUST;
1400 NEXT J
1410 PRINT#U
1420 FOR TEK=1 TO 2
1430 PRINT#U,"      ";
1440 FOR J=1 TO AS:PRINT#U,"      ";:NEXT J
1450 PRINT#U
1460 NEXT TEK
1470 FOR J=1 TO AS+1
1480 NOK1=NOK+J:NOK3=NOK2+J
1490 K=EM*B(I,J)*D(I,J)^3/12/H(I)
1500 IF I=1 THEN 1530
1510 MALT=4*K*(0.5*X(NOK1)+X(NOK3))
1520 GOTO 1540
1530 MALT=4*K*0.5*X(NOK1)
1540 PRINT#U,USING" [+#.##]      ";MALT;
1550 NEXT J
1560 PRINT#U
1570 PRINT#U,"      ";
1580 FOR J=1 TO AS:PRINT#U,"      ";:NEXT J
1590 PRINT#U
1600 NEXT I
1610 PRINT#U,"      ---";
1620 FOR J=1 TO AS:PRINT#U,"      ---";:NEXT J
1630 PRINT#U
1640 DATA 1,1,3,3,.25,.55,.25,.55,.2,.6,1,1
```

KAYNAKLAR

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