1. ve 2. sorularda, I. gruptaki sözcüklerin harfleri birer rakamla gösterilerek II. gruptaki sayılar elde edilmiştir. Soru işaretiyle belirtilen sözcüğün hangi sayıyla gösterildiğini bulunuz.

In questions 1 and 2, the numbers in group II stand for the words in group I, when each letter has been coded with a specific numeral. Find the number which corresponds to the word indicated by the question mark.

1.

I.

S A Y I
K I Y I
A Y I K
B O Y A
S O B A

II.

1278 3127 3951
5921 8727

S O B A = **?**

A) 1278 B) 3127 C) 3951
D) 5921 E) 8727

2.

I.

M A S A
Y A M A
K U R U
R O R O
M A Y O

II.

1353 1367 6313
8787 9282

M A S A = **?**

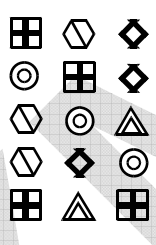
A) 1353 B) 1367 C) 6313
D) 8787 E) 9282

3. ve 4. sorularda, I. gruptaki kümelerin şekilleri birer rakamla gösterilerek II. gruptaki sayılar elde edilmiştir. Soru işaretiyle belirtilen kümenin hangi sayıyla gösterildiğini bulunuz.

In questions 3 and 4, the numbers in group II stand for the sets of figures in group I, when each figure has been coded with a specific numeral. Find the number which corresponds to the set of the figures indicated by the question mark.

3.

I.



II.

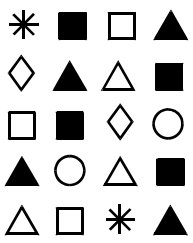
213 235 371
721 757

 = **?**

A) 213 B) 235 C) 371
D) 721 E) 757

4.

I.



II.

2139 3751 4127
5247 7951

 = **?**

A) 2139 B) 3751 C) 4127
D) 5247 E) 7951

ÖSYM

5. ve 6. soruları aşağıdaki tabloya göre cevaplayınız.
Answer questions 5 and 6 in accordance with the table given below.

□	A	B	C	D	E
A	B	C	D	E	A
B	C	D	E	A	B
C	D	E	A	B	C
D	E	A	B	C	D
E	A	B	C	D	E

Tabloda □ işleminin görevi belirlenmiştir.

The operation of □ is established in the table.

Örnekler (Examples) :

$A \square B = C$

$B \square C = E$

5.

$(D \square B) \square (E \square C) = ?$

A) A B) B C) C D) D E) E

6.

$(x \square A) \square A = D$

$x = ?$

A) A B) B C) C D) D E) E

7.

I. $a \otimes b = \begin{cases} a^2 - b^2, & a \le b \\ 2ab + 2, & a > b \end{cases}$

II. $(-1) \otimes (2 \otimes 1) = ?$

I. eşitlikte $\otimes$ işleminin görevi belirlenmiştir. Buna göre, II. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

In equation I, the operation of $\otimes$ is established. According to this operation, which of the following does the question mark stand for in equation II?

A) 27 B) 20 C) –9 D) –25 E) –35

8.

I. $a \nabla b = \frac{1}{a} + \frac{1}{b}$

II. $a \Theta b = (a+1)b$

III. $(3 \nabla 5) \Theta 15 = ?$

I. ve II. eşitliklerde ∇ ve Θ işlemlerinin görevleri belirlenmiştir. Buna göre, III. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

In equations I and II, the operations of ∇ and Θ are established. According to these operations, which of the following does the question mark stand for in equation III?

A) 12 B) 16 C) 19 D) 21 E) 23

ÖSYM

9.

+	a	b	c
a			13
b	17		
c		3a	

a = ?

Yukarıdaki toplama tablosunda a, b ve c harfleri pozitif birer sayının yerine kullanılmıştır. Buna göre, a kaçtır?

In the addition table above, the letters a, b and c each stand for a positive number. Accordingly, what is the value of a?

A) 6 B) 8 C) 9 D) 10 E) 12

10.

X	a	b
a	a+6	
b		8a+1

b = ?

Yukarıdaki çarpma tablosunda a ve b harfleri pozitif birer sayının yerine kullanılmıştır. Buna göre, b kaçtır?

In the multiplication table above, the letters a and b each stand for a positive number. Accordingly, what is the value of b?

A) 4 B) 5 C) 6 D) 7 E) 8

11.

X	a	b
a		c^2-1
b	24	

+	a	b	c
a			
b			11

b = ?

Yukarıdaki çarpma ve toplama tablolarında a, b ve c harfleri pozitif birer sayının yerine kullanılmıştır. Buna göre, b kaçtır?

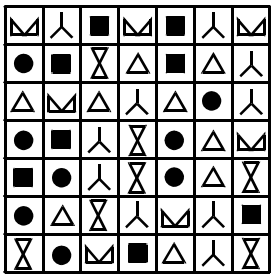
In the multiplication and addition tables above, the letters a, b and c each stand for a positive number. Accordingly, what is the value of b?

A) 6 B) 7 C) 8 D) 9 E) 10

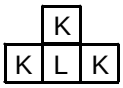
ÖSYM

12. – 14. sorularda her harf birbirinden farklı bir şekle karşılık gelmektedir.
In questions 12 – 14, there is a different symbol to represent each letter.

12.



I.



II.

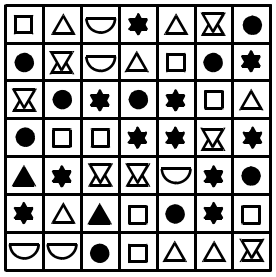
K = △ L = ⅄ **M = ? N = ?**

I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre, II deki M ve N nin yerine aşağıdakilerden hangisi gelmelidir?

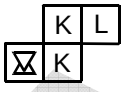
I and II are different parts of the figure above. Accordingly, which of the following combinations should replace M and N in II?

	M	N
A)	●	■
B)	⋏	⧖
C)	■	⧖
D)	■	●
E)	⧖	⋏

13.



I.



II.

K = ◡ L = ✸ **M = ? N = ?**

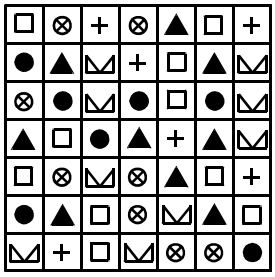
I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre, II deki M ve N nin yerine aşağıdakilerden hangisi gelmelidir?

I and II are different parts of the figure above. Accordingly, which of the following combinations should replace M and N in II?

	M	N
A)	●	▲
B)	□	▲
C)	□	●
D)	●	□
E)	▲	□

ÖSYM

14.



I.

K	L
L	K

II.

	L	**M**
N	L	

K = ⊗ L = ◺ **M = ? N = ?**

I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre, II deki M ve N nin yerine aşağıdakilerden hangisi gelmelidir?

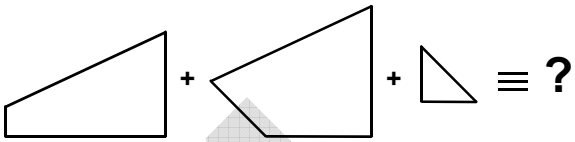
I and II are different parts of the figure above. Accordingly, which of the following combinations should replace M and N in II?

	M	N
A)	+	●
B)	●	□
C)	●	▲
D)	+	▲
E)	□	●

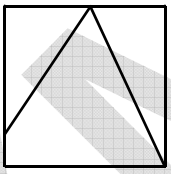
15. – 17. sorularda verilen parçalar kullanılarak oluşturulan şekli bulunuz.

In questions 15 – 17, find the figure using given fragments.

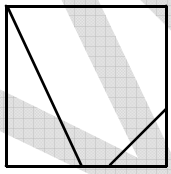
15.



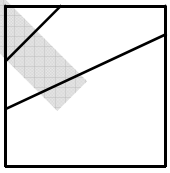
A)



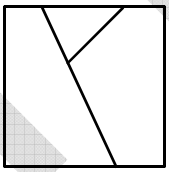
B)



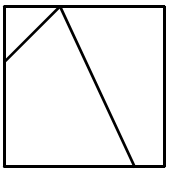
C)



D)

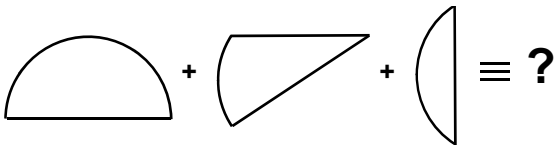


E)

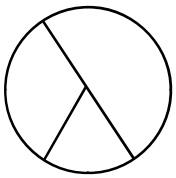


ÖSYM

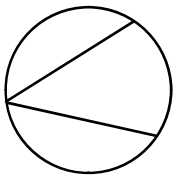
16.



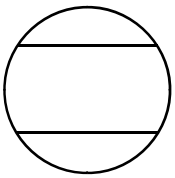
A)



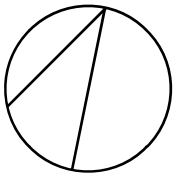
B)



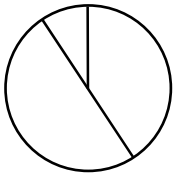
C)



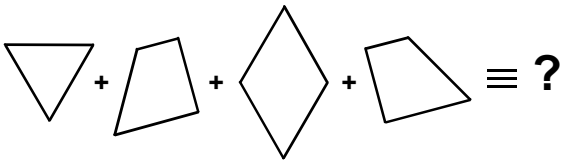
D)



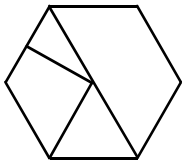
E)



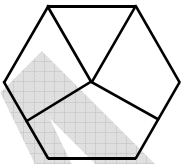
17.



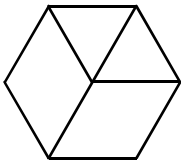
A)



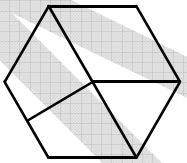
B)



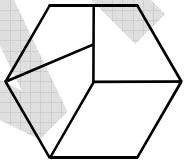
C)



D)

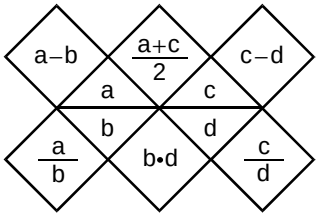


E)



ÖSYM

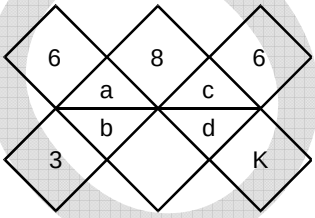
18. – 20. soruları aşağıdaki şekle göre cevaplayınız.
Answer questions 18 – 20 in accordance with the figure given below.



Yukarıdaki şekil a, b, c ve d harfleriyle gösterilen dört pozitif tam sayıyı içeren bazı işlemlere göre düzenlenmiştir. Harflerin gösterdiği sayılar her soruda farklı olabilir fakat, bunlarla yapılacak işlemler her soruda aynıdır.

The figure above has been organized according to various operations using four positive integers represented by the letters, a, b, c and d. The integers represented by the letters may change from question to question, but the operations to be done remain the same.

18.



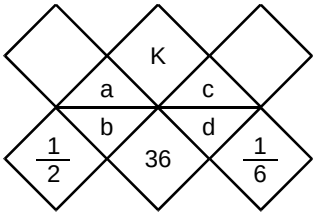
K = ?

Yukarıda verilen şekle göre, K kaçtır?

According to the figure above, what is the value of K?

A) 6 B) 7 C) 8 D) 9 E) 10

19.



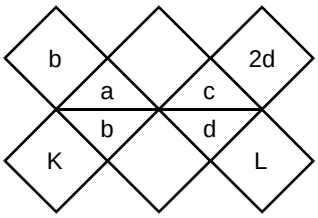
K = ?

Yukarıda verilen şekle göre, K kaçtır?

According to the figure above, what is the value of K?

A) 2 B) 3 C) 5 D) 6 E) 8

20.



K + L = ?

Yukarıda verilen şekle göre, K + L kaçtır?

According to the figure above, what is the value of K + L?

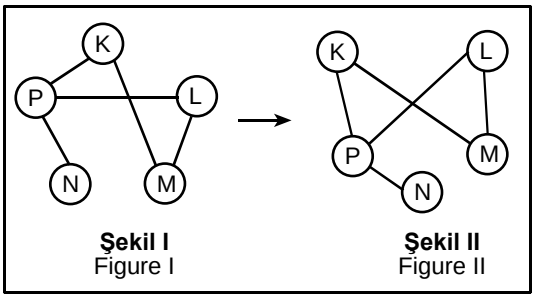
A) 2 B) 3 C) 4 D) 5 E) 6

ÖSYM

21. – 23. soruları örnekte verilen ilişkiye göre cevaplayınız.

In questions 21 – 23, find the correct answer in accordance with the relationship established in the example below.

ÖRNEK
EXAMPLE



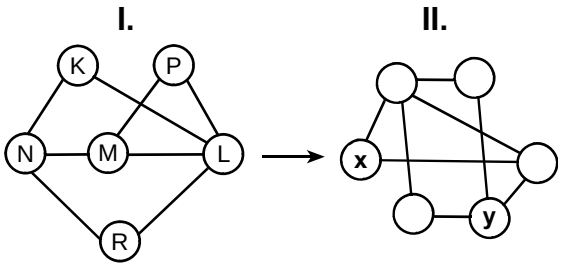
Şekil I
Figure I

Şekil II
Figure II

K, L, M, N ve P harfleri I. şekildeki gibi birbirine bağlanmıştır. I. şekildeki bağlantı sayıları ve birbirine bağlanan harfler değişmemek koşuluyla II. şekil elde edilmiştir.

Letters K, L, M, N and P are linked as in Figure I. Figure II has been constructed so as not to change which letters are linked to which, and the number of links made with each letter, in Figure I.

21.



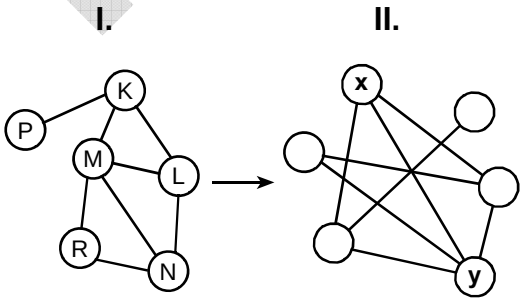
x=? y=?

II. şekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.

Find the letters that correspond to x and y in Figure II.

	x	y
A)	K	N
B)	K	R
C)	M	L
D)	P	L
E)	P	N

22.



x=? y=?

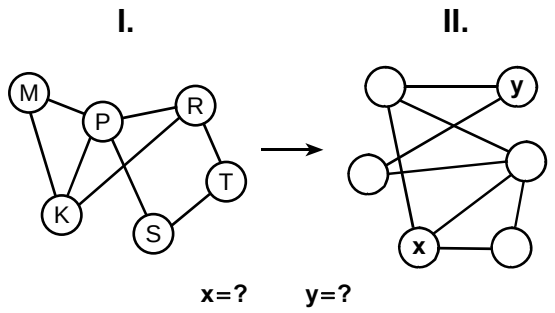
II. şekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.

Find the letters that correspond to x and y in Figure II.

	x	y
A)	L	K
B)	L	M
C)	N	K
D)	N	R
E)	R	M

ÖSYM

23.

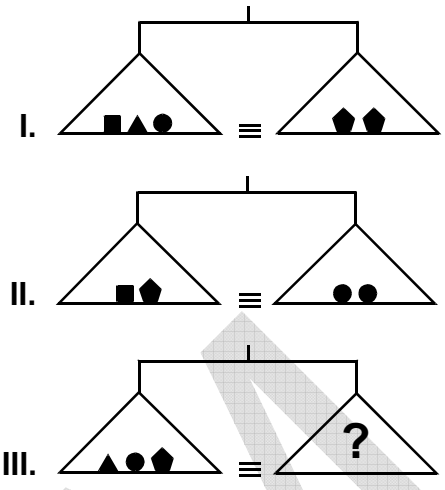


II. şekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.

Find the letters that correspond to x and y in Figure II.

	x	y
A)	R	S
B)	R	P
C)	K	M
D)	K	T
E)	M	T

24.



Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işareti aşağıdakilerden hangisini göstermektedir?

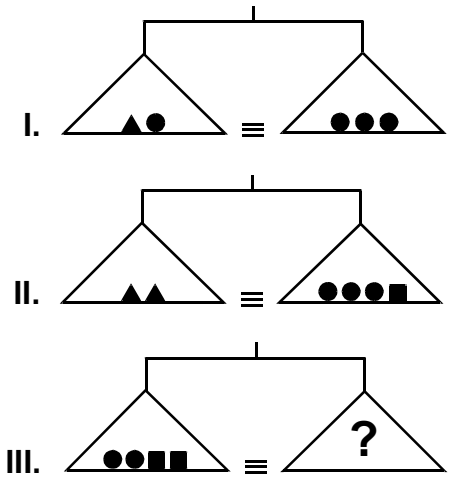
All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

A) ●▲■ B) ▲■■■ C) ▲▲■■

D) ■■■▲▲ E) ■■■●●

ÖSYM

25.



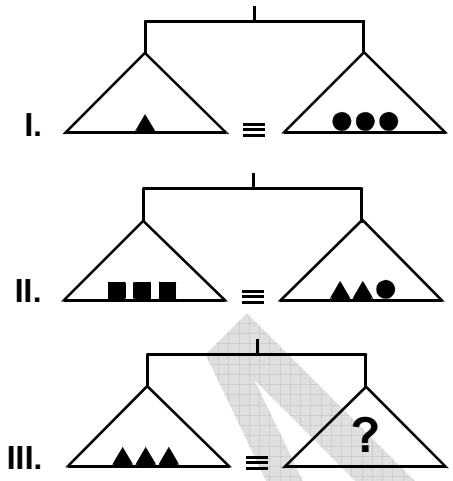
Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işareti aşağıdakilerden hangisini göstermektedir?

All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

A) ▲▲ B) ▲▲■ C) ▲▲▲

D) ■▲▲▲ E) ▲▲▲●

26.



Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işareti aşağıdakilerden hangisini göstermektedir?

All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

A) ■■■■ B) ■■●● C) ■■●●●

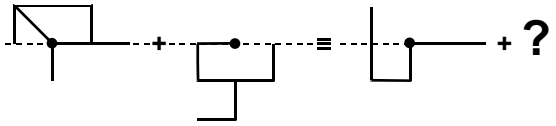
D) ■■■●● E) ■●●●●

ÖSYM

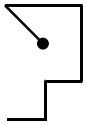
27. – 30. sorularda, soru işaretinin yerine getirilmesi gereken şekli bulunuz.

In questions 27 – 30, find the figure to replace the question mark.

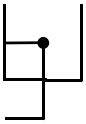
27.



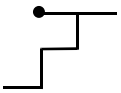
A)



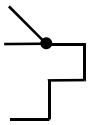
B)



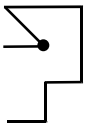
C)



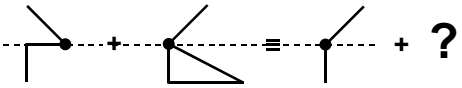
D)



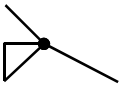
E)



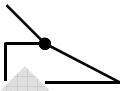
28.



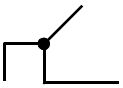
A)



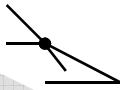
B)



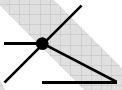
C)



D)

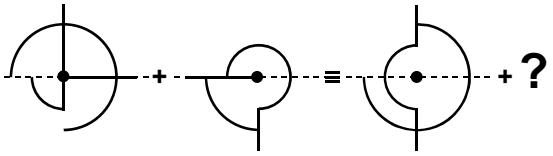


E)

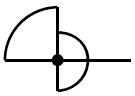


ÖSYM

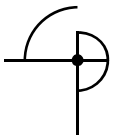
29.



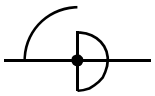
A)



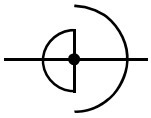
B)



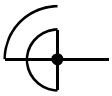
C)



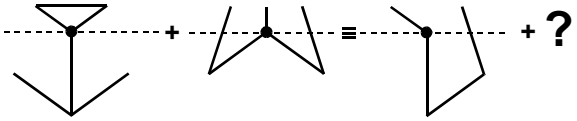
D)



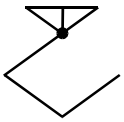
E)



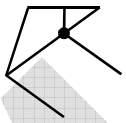
30.



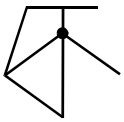
A)



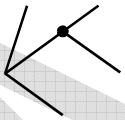
B)



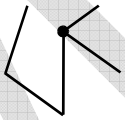
C)



D)



E)

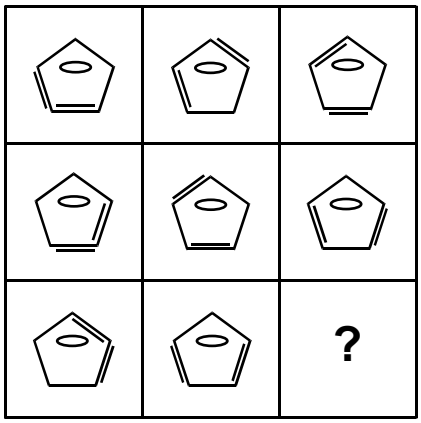


ÖSYM

31. – 34. sorularda, verilen şekil matrisinde soru işaretinin yerine hangi şeklin getirilmesi gerektiğini bulunuz.

In questions 31 – 34, find the figure which the question mark stands for in the given figure matrix.

31.



A)

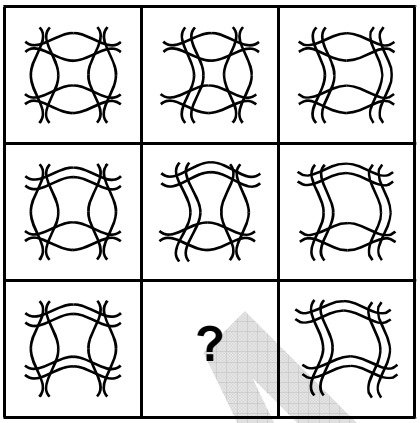

B)


C)


D)


E)


32.



A)


B)

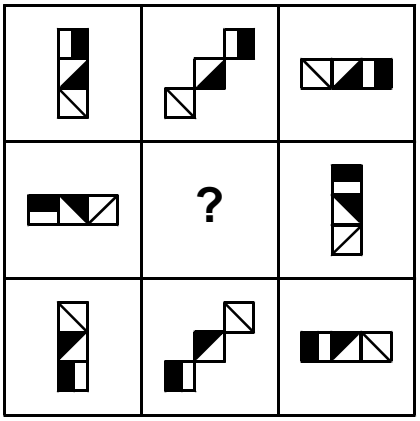

C)

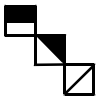

D)

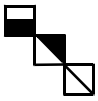

E)

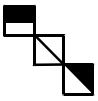

ÖSYM

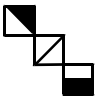
33.

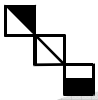


A) 

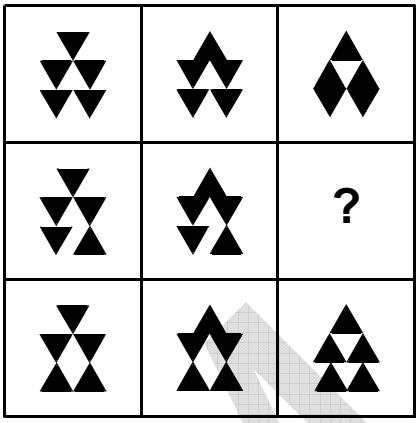
B) 

C) 

D) 

E) 

34.



A) 

B) 

C) 

D) 

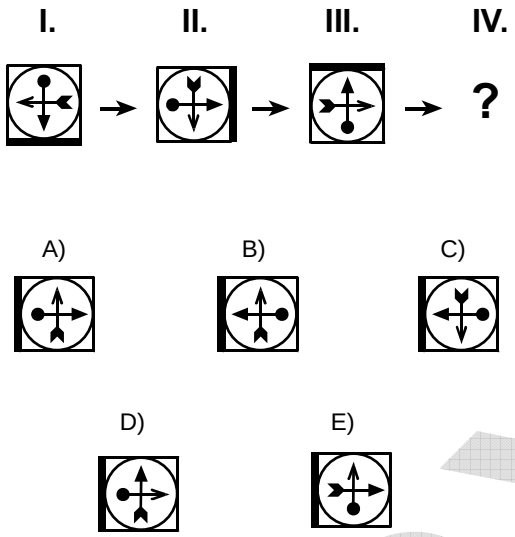
E) 

ÖSYM

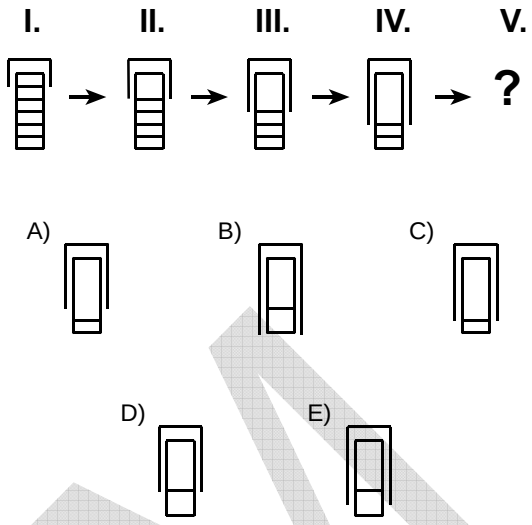
35. – 38. sorularda, verilen şekil dizisinde soru işaretinin yerine getirilmesi gereken şekli bulunuz.

In questions 35 – 38, find the figure which the question mark stands for in the given figure sequence.

35.

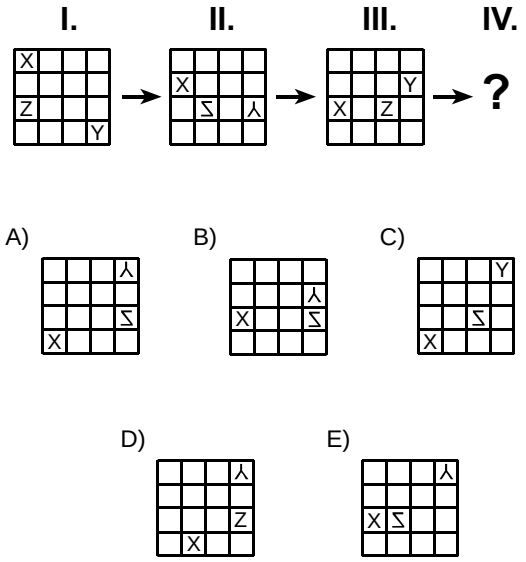


36.

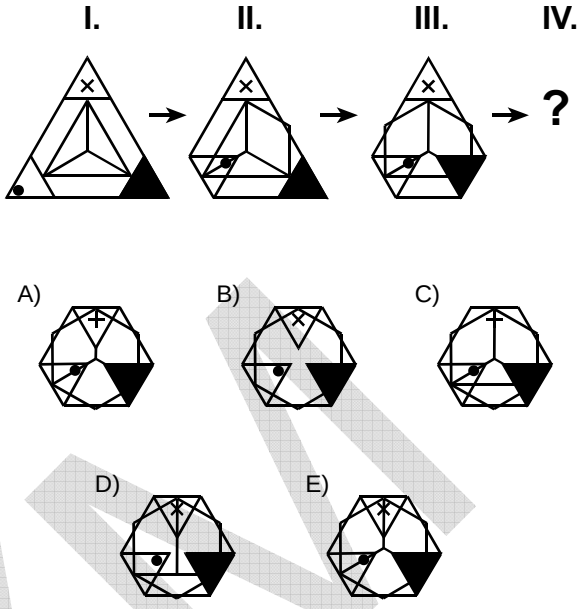


ÖSYM

37.



38.

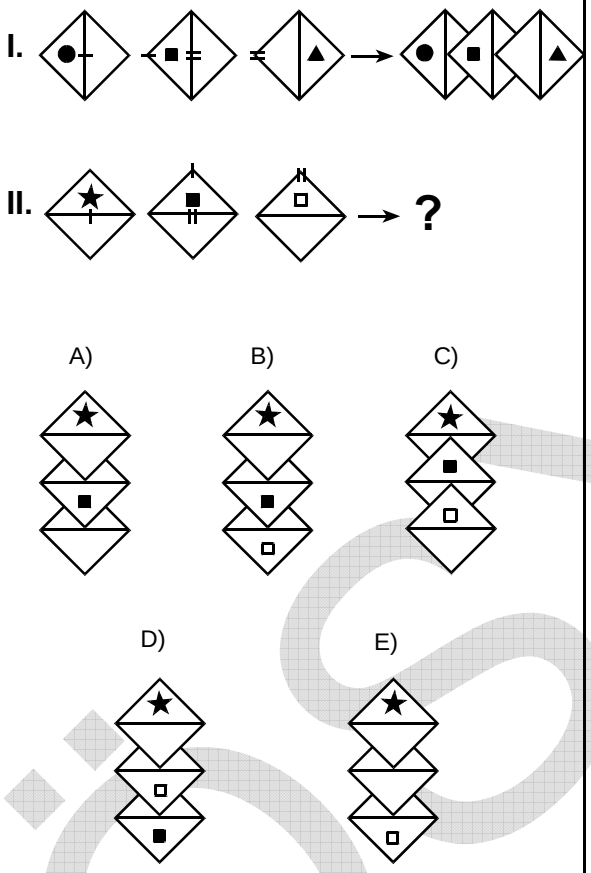


ÖSYM

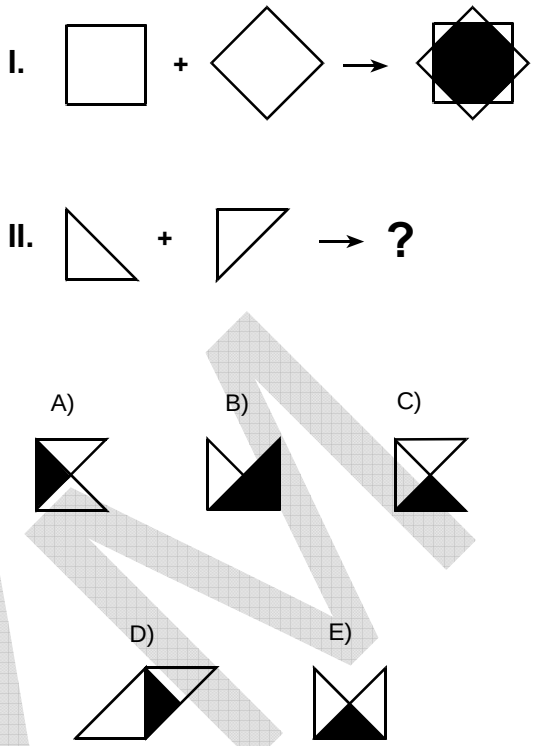
39. – 41. sorularda, I. satırda belirlenen ilişkiye göre II. satırı hangi şeklin tamamladığını bulunuz.

In questions 39 – 41, find the figure which completes row II in accordance with the relationship established in row I.

39.

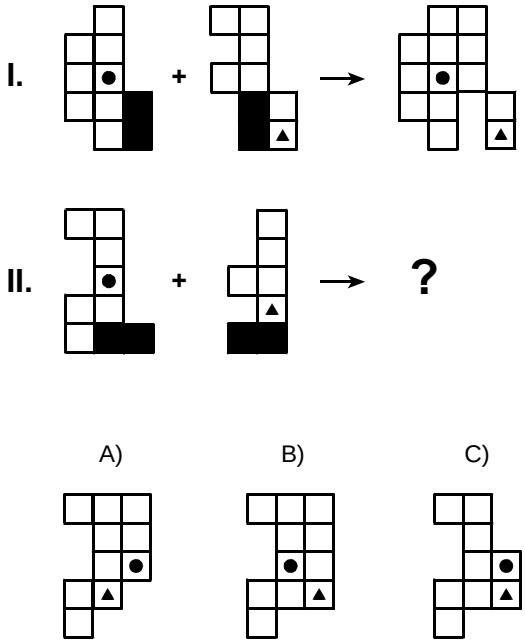


40.



ÖSYM

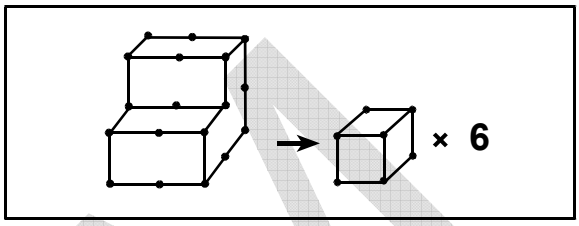
41.



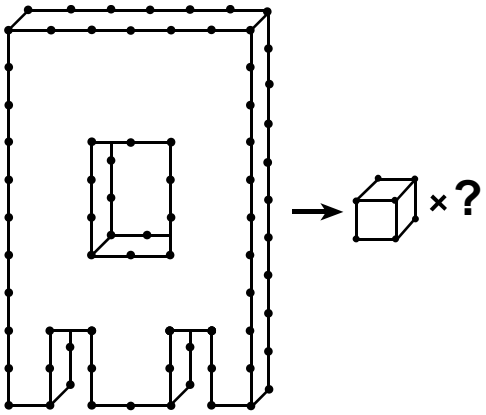
42. – 44. soruları örnekte verilen ilişkiye göre cevaplayınız.

In questions 42 – 44, find the correct answer in accordance with the relationship established in the example below.

ÖRNEK
EXAMPLE



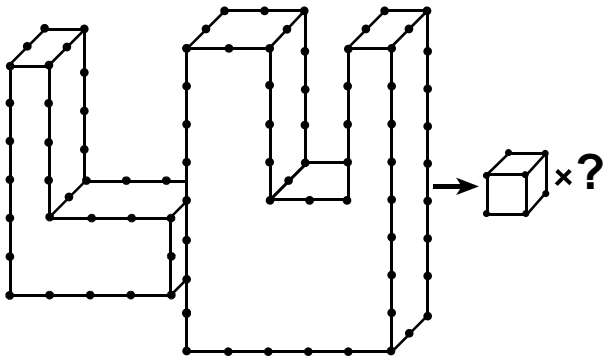
42.



A) 48 B) 50 C) 52 D) 54 E) 56

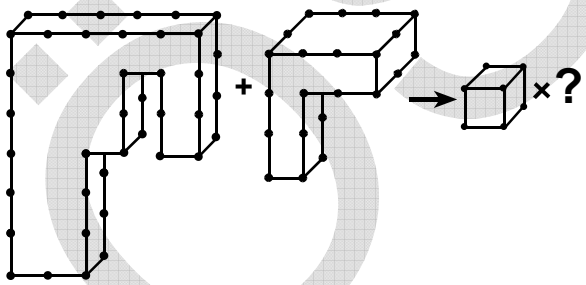
ÖSYM

43.



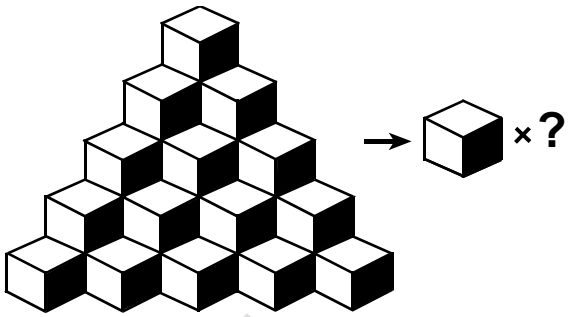
A) 80 B) 82 C) 84 D) 86 E) 88

44.



A) 21 B) 23 C) 25 D) 27 E) 29

45.



Yukarıdaki şekil kaç tane küpten oluşmaktadır?

How many cubes are there in the figure above?

A) 25 B) 27 C) 30 D) 32 E) 35

ÖSYM

46.

$$\frac{1}{2}-\left(\frac{1}{2}-\frac{1}{3}\right)-\left(\frac{1}{2}+\frac{1}{3}-\frac{1}{6}\right)=?$$

A) $\frac{-1}{3}$ B) $\frac{-1}{4}$ C) $\frac{-1}{6}$ D) $\frac{1}{2}$ E) $\frac{1}{4}$

47.

$$\left[\left(3+\frac{1}{4}\right):\left(\frac{0,09}{0,9}\right)\right]+\frac{1}{2}=?$$

A) $\frac{3}{4}$ B) $\frac{5}{6}$ C) 20 D) 27 E) 33

48.

$$\frac{\sqrt{2,89}+\sqrt{2,25}}{\sqrt{1,21}-\sqrt{0,09}}=?$$

A) 5 B) 4 C) 3 D) 2 E) 1

49.

$$0,36x-0,9=0,12x+0,3$$

$x=?$

A) 0,2 B) 0,5 C) 0,75 D) 4 E) 5

ÖSYM

50.

$$\frac{x}{y} = \frac{7}{4}$$

$$x - y = \frac{3}{2}$$

$y = ?$

A) -4 B) -1 C) 2 D) 6 E) 8

51.

$$\sqrt[3]{x-1} - \sqrt[3]{8x-8} + \sqrt[3]{125x-125} = 12$$

$x = ?$

A) 20 B) 22 C) 25 D) 27 E) 28

52.

$$a + 2b = 1$$

$$2a - b = 2$$

$$\frac{2a^2 + 3ab - 2b^2}{\frac{a}{2} + b} = ?$$

A) $\frac{3}{2}$ B) $\frac{5}{2}$ C) $\frac{7}{2}$ D) 4 E) 5

53.

$$a + b = 3$$

$$x + y = 2$$

$$ax + ay + bx + by = ?$$

A) 4 B) 5 C) 6 D) 7 E) 9

ÖSYM

54.

$$\left(\frac{1}{3}\right)^{-2n} \cdot 9^{n+1} \cdot 27^{1-n} = 81$$

$n = ?$

A) -1 B) 0 C) 1 D) 2 E) 3

55.

$$\frac{a^3+b^3}{(a-b)^2+ab} \cdot \frac{a-b}{a^2-b^2} = ?$$

A) $a-b$ B) $a+b$ C) $a \cdot b$ D) 1 E) 2

56.

$$\begin{array}{l|l} x^6 - x^4 + x^2 + m & x^2 - 1 \\ \hline & B(x) \\ \underline{-\qquad\qquad} & \\ \qquad\qquad 0 & \end{array}$$

$m = ?$

A) -2 B) -1 C) 0 D) 1 E) 2

57.

$$\log_9 3 + \log_{16} 8 = ?$$

A) $\frac{1}{4}$ B) $\frac{3}{4}$ C) $\frac{5}{4}$ D) $\frac{7}{4}$ E) $\frac{9}{4}$

ÖSYM

58.

$$\log_3 5 = a$$

$$\log_{\sqrt{27}}\left(\frac{1}{125}\right) = ?$$

A) $-2a$ B) $-a$ C) a D) $2a$ E) $3a$

59.

$$\lim_{x\to\infty} \frac{2\sqrt{x}}{\ln x} = ?$$

A) $-\infty$ B) 0 C) 1 D) 2 E) ∞

60.

$$\lim_{x\to -2} \frac{f(x)}{x^2} = 1$$

$$\lim_{x\to -2} \frac{f(x)}{x} = ?$$

A) -2 B) -1 C) 0 D) 1 E) 2

61.

$$\lim_{x\to 0} \frac{x + x\cos x}{\sin x \cdot \cos x} = ?$$

A) -2 B) -1 C) 0 D) 1 E) 2

62.

$$f(x) = 2x^2 + 1$$

$$g(x) = \frac{x}{2}$$

$$\left(fog^{-1}\right)(2) = ?$$

A) 21 B) 24 C) 30 D) 33 E) 40

ÖSYM

63.

$$f(x) = \ln\left(2x^2 \cdot \ln x^2\right)$$

$$f'(e) = ?$$

A) $\frac{e}{2}$ B) $\frac{2}{e}$ C) $\frac{3}{e}$ D) $\frac{e+1}{e}$ E) $\frac{e+1}{3}$

64.

$$f(x) = \sin(\cos 2x)$$

$$f'\left(\frac{\pi}{4}\right) = ?$$

A) -2 B) -1 C) 0 D) 2 E) 4

65.

$$x^2 + y^2 + 2x - y^4 = 0$$

$$\left.\frac{dy}{dx}\right|_{(-2,-1)} = ?$$

A) -3 B) -2 C) -1 D) 1 E) 2

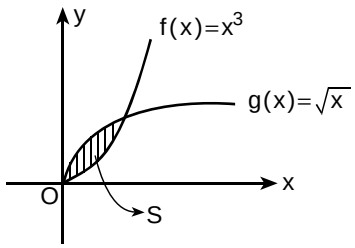
66.

$$f(x) = \log_3 e^x$$

$$f'(x) = ?$$

A) $\frac{1}{\ln 3}$ B) $\frac{1}{\ln x}$ C) $\frac{1}{\ln 3x}$ D) $\ln 3$ E) $\ln 3x$

67.



$S = ?\ br^2$ (unit square)

A) $\frac{1}{4}$ B) $\frac{3}{4}$ C) $\frac{5}{12}$ D) $\frac{7}{12}$ E) $\frac{11}{12}$

ÖSYM

68.

$$\int \frac{2\ln x}{x}dx = ?$$

A) $\ln x + c$ B) $\ln^2 x + c$ C) $x\ln x + c$

D) $x^2e^x + c$ E) $xe^x + c$

69.

$$\int_{-2}^{4} \frac{d}{dx}\left(\frac{x^2}{2}\right)dx = ?$$

A) 2 B) 4 C) 6 D) 8 E) 9

70.

$$\int_{2}^{3} \frac{3dx}{x^2 + x - 2} = ?$$

A) $\ln\frac{8}{7}$ B) $\ln\frac{8}{5}$ C) $\ln\frac{8}{3}$

D) $\ln\frac{3}{8}$ E) $\ln\frac{5}{8}$

71.

$$\int_{1}^{e^{\frac{\pi}{3}}} \frac{\cos(\ln x)dx}{x} = ?$$

A) 0 B) $\frac{1}{2}$ C) $\frac{\sqrt{2}}{2}$

D) $\frac{\sqrt{3}}{2}$ E) 1

72.

$$i^2 = -1$$

$$\frac{4}{\sqrt{3} - i} + \frac{2}{i} = ?$$

A) $\sqrt{3} + i$ B) $\sqrt{3} - i$ C) $2\sqrt{3} - i$

D) $\sqrt{3} - 2i$ E) $\sqrt{3} + 2i$

ÖSYM

73.

$$\cos\left(\sin^{-1}\left(\frac{1}{2}\right)\right) = ?$$

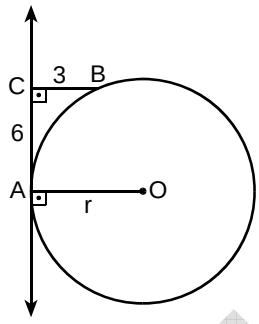
A) $\frac{1}{2}$ B) $\frac{\sqrt{2}}{2}$ C) $\frac{\sqrt{3}}{2}$ D) $\sqrt{2}$ E) 1

74.

$$\frac{\cos 15^\circ}{\sin 105^\circ} = ?$$

A) 0 B) $\frac{1}{2}$ C) $\frac{\sqrt{2}}{2}$ D) $\frac{\sqrt{3}}{2}$ E) 1

75.



$CA \perp AO$

$CB \perp CA$

$|CB| = 3$ cm

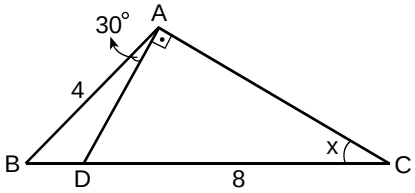
$|CA| = 6$ cm

$|AO| = r$ cm

r = ?

A) 5 B) 5,6 C) 6 D) 6,5 E) 7,5

76.



$AD \perp AC$

$|AB| = 4$ cm

$|DC| = 8$ cm

$m(\widehat{BAD}) = 30^\circ$

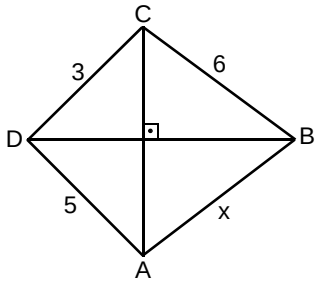
$m(\widehat{BCA}) = x^\circ$

x = ?

A) 15 B) 20 C) 25 D) 30 E) 40

ÖSYM

77.



$CA \perp DB$

$|BC| = 6$ cm

$|CD| = 3$ cm

$|DA| = 5$ cm

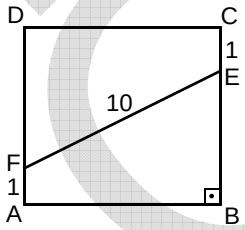
$|AB| = x$ cm

x = ?

A) $\sqrt{15}$ B) $2\sqrt{13}$ C) $5\sqrt{2}$

D) 7 E) 9

78.



AB // DC

AD // BC

$CB \perp AB$

$|AB| = |BC| = |CD| = |DA|$

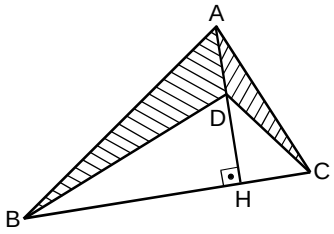
$|CE| = |AF| = 1$ cm

$|EF| = 10$ cm

A(ABCD) = ? cm^2

A) 36 B) 49 C) 54 D) 64 E) 81

79.



$AH \perp BC$

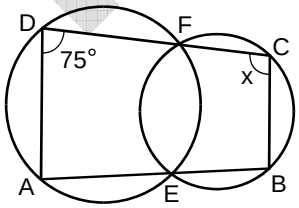
$|BC| = 16$ cm

$|AD| = 5$ cm

A(ABD) + A(ADC) = ? cm^2

A) 35 B) 40 C) 42 D) 45 E) 54

80.



$m(\widehat{ADC}) = 75^\circ$

$m(\widehat{BCD}) = x^\circ$

x = ?

A) 75 B) 90 C) 105 D) 115 E) 120

TEST BİTTİ.

CEVAPLARINIZI KONTROL EDİNİZ.

END OF TEST.

PLEASE CHECK YOUR ANSWERS.

ÖSYM