

ÇÖZÜMLERİ

$$1. \quad \begin{array}{c} \text{I} \\ \bullet \quad \circ \quad \blacktriangle \quad \triangle \\ \circ \quad \triangle \quad \blacktriangle \quad \blacksquare \\ \square \quad \blacksquare \quad \circ \quad \bullet \\ \blacksquare \quad \blacktriangle \quad \triangle \quad \square \\ \bullet \quad \square \quad \triangle \quad \blacktriangle \end{array} \Rightarrow \begin{array}{c} \text{II} \\ 2716 \quad 3624 \quad 4217 \\ 4371 \quad 6173 \end{array}$$

Şekillerde solda ● (siyah daire)den 2 adet bulunmakta rakam eşiti 4 olmakta

O halde

$$\square \blacksquare \circ \bullet \rightarrow 3624$$

$$\square = 3, \blacksquare = 6, \circ = 2, \bullet = 4 \text{ olur.}$$

$$\circ \triangle \blacktriangle \blacksquare \rightarrow 2716 \quad \triangle = 7, \blacktriangle = 1$$

$$\bullet \square \triangle \blacktriangle \rightarrow 4371 \text{ bulunur.}$$

Cevap: D

$$3. \quad \begin{array}{c} \text{I} \\ \text{DEMİR} \\ \text{MİDYE} \\ \text{İDMAN} \\ \text{DARBE} \\ \text{MEYAN} \end{array} \Rightarrow \begin{array}{c} \text{II} \\ 47518 \quad 52318 \quad 54732 \\ 71962 \quad 72549 \end{array}$$

Harflerde sağda bir tane R var. Buradan R = 9 olur.

$$\text{DEMİR} = 72549$$

$$D = 7, E = 2, M = 5, İ = 4, Y = 3, A = 1, N = 8, B = 6$$

$$\text{MİDYE} \rightarrow 54732$$

$$\text{İDMAN} \rightarrow 47518$$

$$\text{DARBE} \rightarrow 71962$$

$$\text{MEYAN} \rightarrow 52318$$

Cevap: A

TASARI EĞİTİM YAYINLARI

$$2. \quad \begin{array}{c} \text{I} \\ \square \quad \diamond \quad * \quad \bullet \\ * \quad \triangle \quad \bullet \quad \circ \\ \diamond \quad \triangle \quad \circ \quad \square \\ \bullet \quad \square \quad \circ \quad \diamond \\ \triangle \quad * \quad \diamond \quad \circ \end{array} \Rightarrow \begin{array}{c} \text{II} \\ 6437 \quad 1345 \quad 4657 \\ 3671 \quad 5173 \end{array}$$

Şekillerde sağda ○ (boş daire) 2 adet bulunmakta rakam eşit 7 olmakta

Şekillerden ◇ 3 olmakta

$$\diamond \triangle \circ \square = 3671 \text{ bulunur.}$$

Cevap: B

$$4. \quad \begin{array}{c} \text{I} \\ \text{AYAR} \\ \text{ALAR} \\ \text{EYER} \\ \text{ELEK} \\ \text{EREK} \end{array} \Rightarrow \begin{array}{c} \text{II} \\ 1314 \quad 1516 \quad 1614 \\ 2326 \quad 2526 \end{array}$$

Harflerde solda 3 adet E var E = 1

2 adet A var A = 2 olur.

Sağda 3 adet R var R = 6

2 adet K var K = 4

$$\text{EREK} \rightarrow 1614$$

O halde ELEK → 1314 bulunur.

Cevap: A

5. I. $a * b = \frac{b}{a-b}$

II. $a \ominus b = (a-b)^a$

III. $(6 * 2) \ominus \frac{1}{4} = ?$

$$6 * 2 = \frac{2}{6-2} = \frac{2}{4} = \frac{1}{2}$$

$$\frac{1}{2} \ominus \frac{1}{4} = \left(\frac{1}{2} - \frac{1}{4}\right)^{\frac{1}{2}} = \left(\frac{1}{4}\right)^{\frac{1}{2}} = \sqrt{\frac{1}{4}}$$

$$= \frac{1}{2} \text{ bulunur.}$$

Cevap: A

6. I. $a \odot b = a^b$

II. $a \otimes b = a + b + (a.b)$

III. $8 \odot \left(1 \otimes \frac{1}{2}\right) = ?$

$$1 \otimes \frac{1}{2} = 1 + \frac{1}{2} + 1 \cdot \frac{1}{2} = 1 + \frac{1}{2} + \frac{1}{2} = 1 + 1 = 2$$

$$8 \odot 2 = 8^2 = 64 \text{ bulunur.}$$

Cevap: C

7. I. $a \square b = (a-1)(b-1)$

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

III. $(8 \square 8) \triangle 99 = ?$

$$8 \square 8 = (8-1)(8-1) = 7.7 = 49$$

$$49 \triangle 99 = (49+1).(99+1) = 50.100 = 5000 \text{ bulunur.}$$

Cevap: C

8.

x	a	b	c
a	6b		
b		10c	15
c			

Tablodan

$$\begin{cases} a.a = 6b \Rightarrow a^2 = 6b \\ b.b = 10c \Rightarrow b^2 = 10c \\ b.c = 15 \end{cases}$$

$$a^2.b^2 = 60.b.c = 900 = (30)^2$$

$$15$$

$$(a.b)^2 = (30)^2 \Rightarrow a.b = 30 \text{ bulunur.}$$

Cevap: C

TASARI EĞİTİM YAYINLARI

9.

x	a	b	c
a			48
b			
c		80	

+	a	b	c
a			
b	8		
c			

(x) tablosundan

$$a.c = 48$$

$$+ \quad c.b = 80$$

$$\underline{c(a+b) = 128}$$

$$8$$

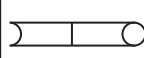


$$c = 16 \text{ bulunur.}$$

(+) tablosundan

$$a + b = 8$$

Cevap: D

10.



			
I	0	1	0
II	0	2	1
III	2	0	1
IV	1	0	1

$$I = \square$$

$$II = ?$$

$$III = ?$$


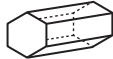
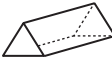
$$IV = ?$$

1. şekilden III \rightarrow  ve IV \rightarrow  olduğu anlaşılır.

2. şekilden II \rightarrow  olduğu anlaşılır.

Cevap: A

11.

				
I	1	0	0	I = □
II	0	6	3	II = ?
III	8	0	2	III = ?
IV	0	2	0	IV = ?

1. şekilden 8 tane \triangle ve 1 tane \square olduğu anlaşılır.

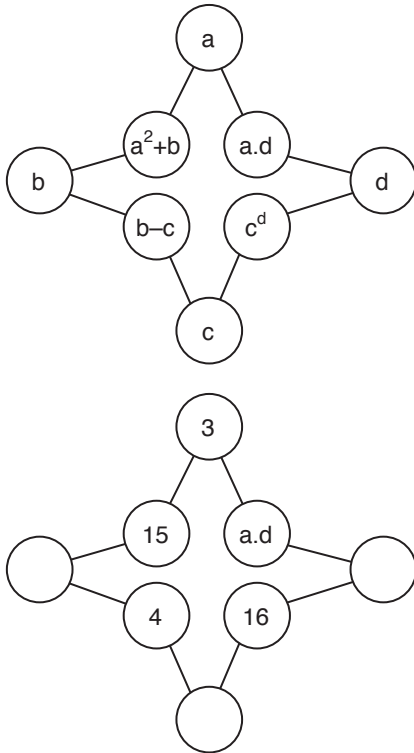
I \rightarrow □ ve III \rightarrow \triangle

2. şekilde 6 tane \square ve 2 tane \hexagon olduğu anlaşılır.

II \rightarrow □ ve IV \rightarrow \hexagon bulunur.

Cevap: E

12.



Şekilden;

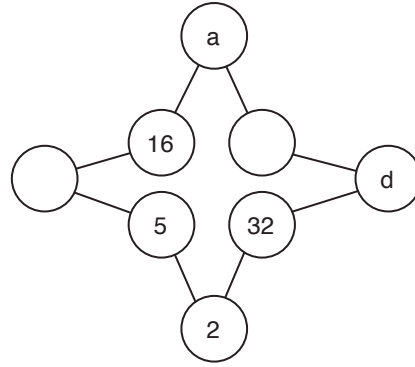
$$a^2 + b = 15, \quad a = 3, \quad b - c = 4 \quad \text{ve} \quad c^d = 16$$

$$\begin{aligned} \downarrow & & & \downarrow & & \downarrow \\ 3^2 + b = 15 & & & b - c = 4 & & 2^d = 2^4 \\ b = 15 - 9 & & & 2 = c & & d = 4 \\ b = 6 & & & & & \end{aligned}$$

O halde $a.d = 3.4 = 12$ bulunur.

Cevap: C

13.



$$a^2 + b = 16, \quad b - c = 5, \quad c^d = 32, \quad c = 2$$

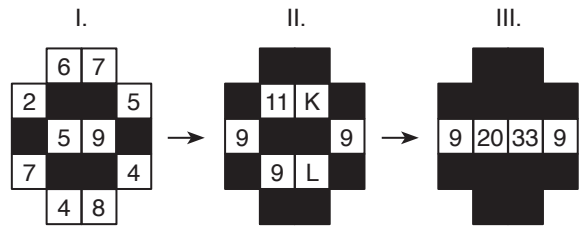
$$\begin{aligned} \downarrow & & & \downarrow & & \\ a^2 + 7 = 16 & & & b - 2 = 5 & & 2^d = 2^5 \\ a^2 = 9 & & & b = 7 & & d = 5 \\ a = 3 & & & & & \end{aligned}$$

O halde $a + d = 3 + 5 = 8$ bulunur.

Cevap: B

TASARI EĞİTİM YAYINLARI

14.



$$\begin{aligned} 6 + 11 = 17 & & & 17 + 13 = 30 \\ 9 + 4 = 13 & & & \end{aligned}$$

bu toplamın yarısı ile 5 ile toplanıyor $5 + 15 = 20$

buradan $K = 16$ ve $L = 17$ olmalı

$$\begin{aligned} 7 + 16 = 23 & & & 23 + 25 = 48 \\ 8 + 17 = 25 & & & \end{aligned}$$

$24 + 9 = 33$ olur.

Cevap: E

15.

I. → $4 - \frac{8}{4} = 2$

II. → $7 - \frac{8}{1} = -1$

III. → ?

Şekillerden

I. (boş üçgen sayısı) - $\frac{\text{Toplam üçgen sayısı}}{\text{Taralı üçgen sayısı}}$

O halde

III → $6 - \frac{8}{2} = 6 - 4 = 2$ bulunur.

Cevap: A

17.

I. ≡

II. ≡

III. ≡

★ → x, ■ → y, ● → z

I.	II.	III.
$3x = y + z$	$4x = 2y$	$z = ?$
	$2x = y$	
$3x = 2x + z$		
$x = z$		

Cevap: A

16.

I. → $2^3 + 3^4 + 1^5 = 90$

II. → ?

Şeklin içindeki sayıya kenar sayısı kuvvet olmakta

II → $2^5 + 3^3 + 1^4 = 32 + 27 + 1 = 60$

Cevap: C

18.

- Üst bant alttakinden 3 fazla
 - Ardışık dizi artışında ise 5 fazlalık bulunmakta
- $K + L + M = 120$
- $M + M + 8 + M + 13 = 120$
- $3M + 21 = 120$
- $3M = 99$
- $M = 33$

O halde; $K = M + 8$

$K = 33 + 8 = 41$ bulunur.

Cevap: C

19.
$$\begin{array}{r} KL \\ + MN \\ \hline 1PR \end{array}$$

$$\begin{array}{r} L \\ - R \\ \hline L \end{array}$$

$$\begin{array}{r} K \\ - P \\ \hline 1 \end{array}$$

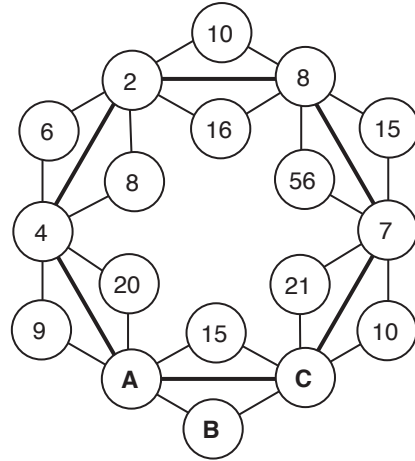
$L - R = L$
 $R = 0$ olur.
 $K - P = 1$
 $K = P + 1$

Seçeneklerden MN = 89 olur.

$$\begin{array}{r} KL \\ + 89 \\ \hline 1P0 \end{array} \rightarrow \begin{array}{r} 21 \\ + 89 \\ \hline 110 \end{array}$$

Cevap: C

21.



dış toplam, iç çarpım şeklinde

$$7 + C = 10$$

$$A \cdot 3 = 15$$

$$A + C = B$$

$$C = 3$$

$$A = 5$$

$$5 + 3 = 8$$

$$A + B + C = 5 + 8 + 3 = 16$$

Cevap: E

TASARI EĞİTİM YAYINLARI

20.
$$\begin{array}{r} KLMN \\ LMN \\ MN \\ + N \\ \hline 4584 \end{array}$$

$$\begin{array}{r} M \\ + N \\ \hline L \end{array}$$

N = 1, M = 6, L = 7, K = 3

O halde L = 7 bulunur.

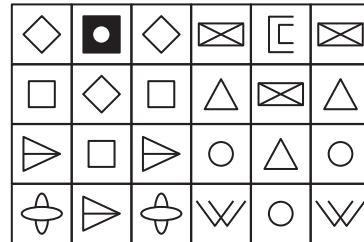
$$\begin{array}{r} 3761 \\ 761 \\ 61 \\ + 1 \\ \hline 4584 \end{array}$$

$$\begin{array}{r} 6 \\ + 1 \\ \hline 7 \end{array}$$

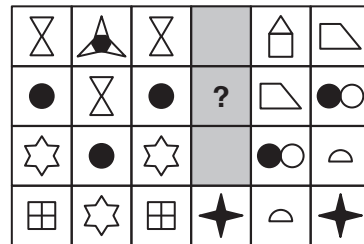
Cevap: D

22.

I.



II.



1. sütun = 3. sütun

4. sütun = 6. sütun

O halde buradan

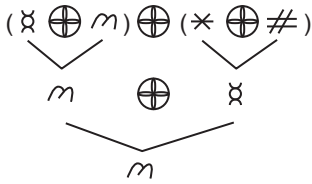


olmalı.

Cevap: D

23.

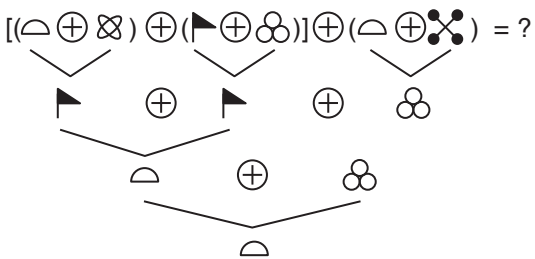
⊕	*	~	α	∩	#
*	∩	#	*	~	α
~	#	*	~	α	∩
α	*	~	α	∩	#
∩	~	α	∩	#	*
#	α	∩	#	*	~



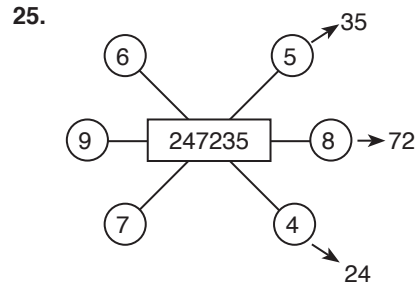
Cevap: C

24.

⊕	⊗	∩	⊗	⊗	▶
⊗	⊗	▶	⊗	∩	⊗
∩	▶	⊗	∩	⊗	⊗
⊗	⊗	∩	⊗	⊗	▶
⊗	∩	⊗	⊗	▶	⊗
▶	⊗	⊗	▶	⊗	∩



Cevap: B



Cevap: A

TASARI EĞİTİM YAYINLARI

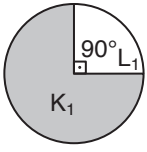
26.

⊗	☆C↓	☆⊗↓	C⊗↓
☆	C↓	L	C⊗↓
C	☆↓	☆⊗↓	M
⊗	☆C↓	☆↓	C↓
↓	K	☆⊗	C⊗

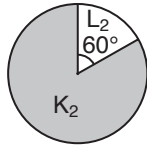
L = ⊗↓, M = ⊗↓, K = ☆C

Cevap: A

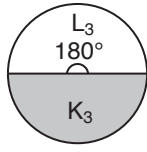
27.



$$M_1 = \frac{K_1}{L_1}$$



$$M_2 = \frac{K_2}{L_2}$$



$$M_3 = \frac{K_3}{L_3}$$

I. daire

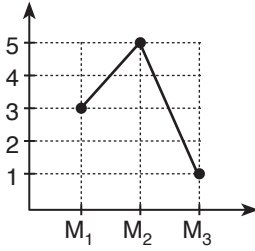
$$M_1 = \frac{K_1}{L_1} = \frac{270}{90} = 3$$

II. daire

$$M_2 = \frac{K_2}{L_2} = \frac{300}{60} = 5$$

III. daire

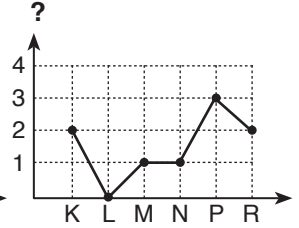
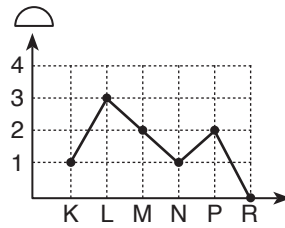
$$M_3 = \frac{K_3}{L_3} = \frac{180}{180} = 1$$



Cevap: E

28.

K	L	M	N	P	R
■	◐	▼	☆	◐	☆
☆	■	◐	◐	☆	⊕
▼	◐	⊕	■	◐	◐
◐	◐	☆	◐	☆	■
☆	◐	▼	◐	☆	⊕
▼	◐	◐	◐	■	☆



Grafikler kaç tane olduğunu gösteriyor.

K = 2 tane

L = 0

M = 1

N = 1

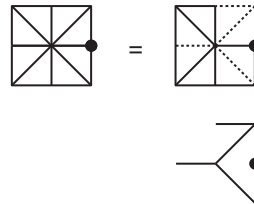
P = 3

R = 2

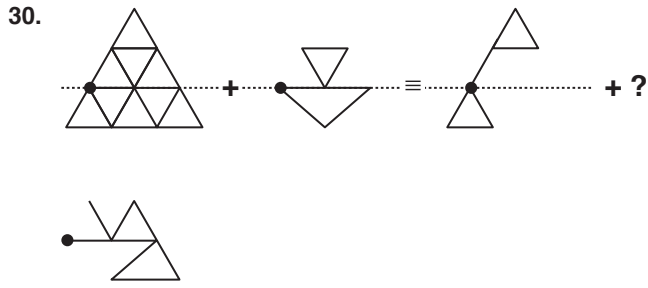
☆

Cevap: C

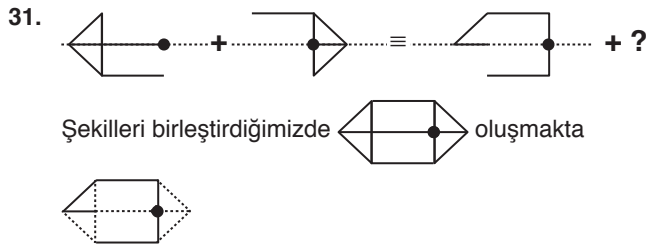
29. İki şeklin birleşimi



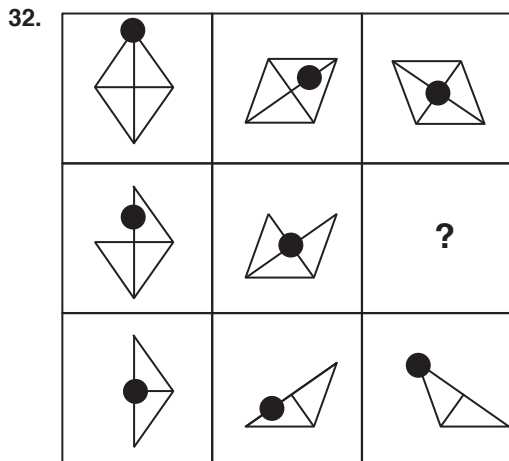
Cevap: B



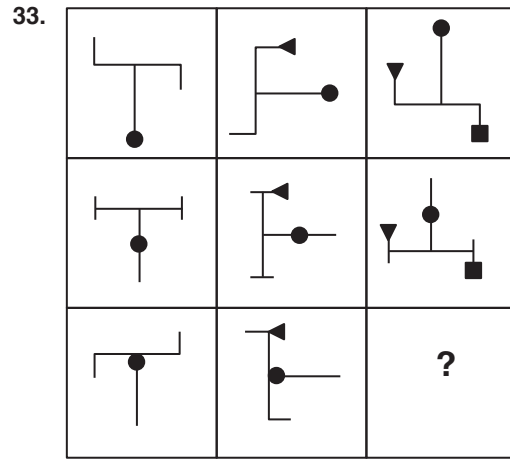
Cevap: A



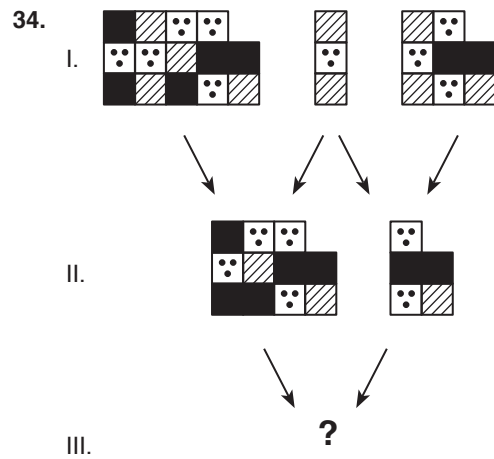
Cevap: B



Cevap: C



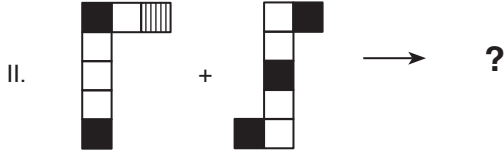
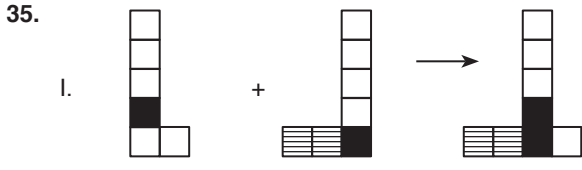
Cevap: B



Orta şekildeki görüntü sağ ve soldan silinmekte II. aşamada ise sol ve sağdaki aynı görüntü silinmekte ortaya

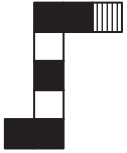


Cevap: A

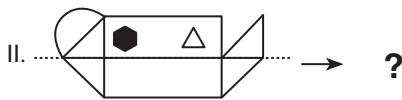
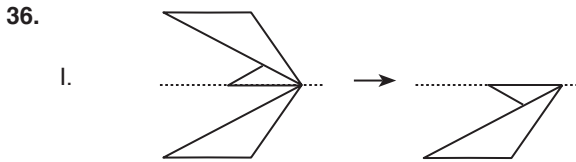


İki şekil birleştirilmekte.

Sağ şekil + sol şekil şeklinde



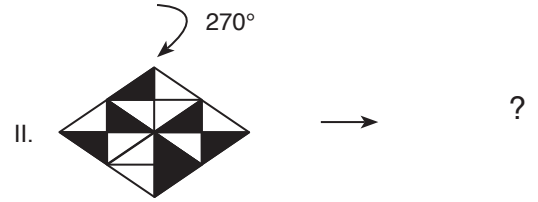
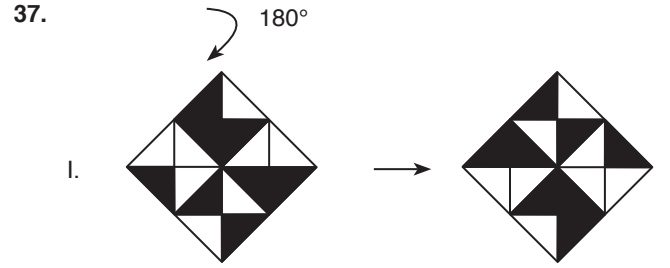
Cevap: D



Üstteki şekil alttaki şeklin üzerine simetri şekilde yerleş-
tirmekte.



Cevap: E

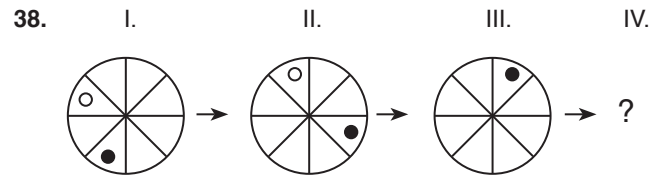


Şekil 270° döndürüldüğünde



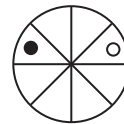
oluşur.

Cevap: D

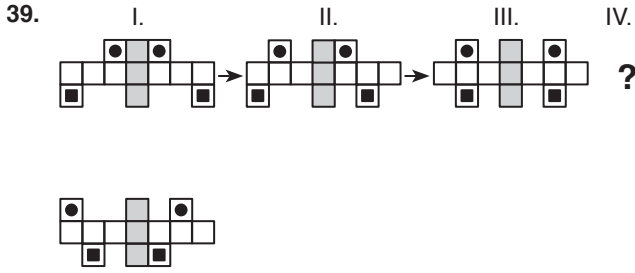


○ → saat yönünde 1 adım ilerlemekte

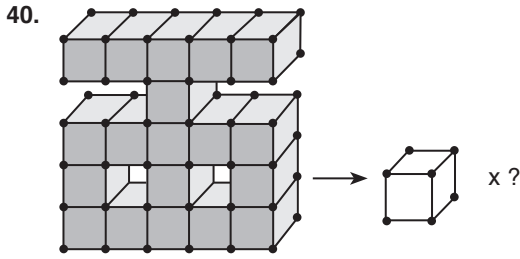
● → saat yönünün tersinde 2 adım ilerlemekte



Cevap: E



Cevap: B



Şekildeki küp sayısı 19 adet olur.

Cevap: C

41. $\frac{2,4}{0,08} + \frac{0,21}{0,07} + \frac{5}{0,5}$

$$= \frac{240}{8} + \frac{21}{7} + \frac{50}{5}$$

$$= 30 + 3 + 10$$

$$= 43 \text{ bulunur.}$$

Cevap: D

42. $\frac{a^{m+2} \cdot a^{n-1}}{a^{m+n}} = \frac{a^m \cdot a^2 \cdot a^n \cdot a^{-1}}{a^{m+n}}$

$$= \frac{a^{m+n} \cdot a}{a^{m+n}} = a \text{ bulunur.}$$

Cevap: A

43. $\frac{\left(\frac{1}{3}-2\right)+\left(\frac{1}{2}-3\right)}{\left(2-\frac{3}{4}\right)\cdot\left(\frac{3}{2}-4\right)} = \frac{\left(\frac{-5}{3}\right)+\left(\frac{-5}{2}\right)}{\left(\frac{5}{4}\right)\cdot\left(\frac{-5}{2}\right)}$

$$= \frac{\frac{-10-15}{6}}{\frac{-25}{8}} = \frac{-25}{6} \cdot \frac{8}{-25} = \frac{4}{3} \text{ bulunur.}$$

Cevap: D

44. $2^x = a$

$$2^{2^{(x+2)}} = 2^{2^x \cdot 2^2} = 2^{4a}$$

Cevap: E

45. $\frac{(\sqrt{8}-\sqrt{2}) \cdot (\sqrt{18}+\sqrt{2})}{(3\sqrt{2}-\sqrt{8})+(\sqrt{8}-\sqrt{2})}$

$$= \frac{(2\sqrt{2}-\sqrt{2}) \cdot (3\sqrt{2}+\sqrt{2})}{(3\sqrt{2}-2\sqrt{2})+(2\sqrt{2}-\sqrt{2})}$$

$$= \frac{\sqrt{2} \cdot 4\sqrt{2}}{\sqrt{2}+\sqrt{2}} = \frac{8}{2\sqrt{2}} = \frac{4}{\sqrt{2}}$$

$$= \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$

Cevap: D

46. $\sqrt[3]{\frac{54}{1,6 \cdot 10^{-2}}} = \sqrt[3]{\frac{54}{16 \cdot 10^{-3}}}$

$$= \sqrt[3]{\frac{27 \cdot 10^3}{8}}$$

$$= \sqrt[3]{\frac{3^3 \cdot 10^3}{2^3}}$$

$$= \frac{3 \cdot 10}{2} = \frac{30}{2} = 15 \text{ bulunur.}$$

Cevap: E

$$47. \frac{n!(n+1)!}{(n-1)!(n+2)!}$$

$$= \frac{(n-1)! \cdot n \cdot (n+1)!}{(n-1)! \cdot (n+1)! \cdot (n+2)}$$

$$= \frac{n}{n+2} \text{ bulunur.}$$

Cevap: D

$$48. \frac{(3n)!(n-3)!}{(3n-1)!(n-2)!}$$

$$= \frac{(3n-1)! \cdot 3n \cdot (n-3)!}{(3n-1)! \cdot (n-3)! \cdot (n-2)} = \frac{3n}{n-2}$$

Cevap: B

$$49. \begin{array}{l} k + 2l + m = 6 \\ 2/ \quad 2k - l + 2m = 7 \\ \hline k + 2l + m = 6 \\ + \quad 4k - 2l + 4m = 14 \\ \hline 5k + 5m = 20 \\ 5(k + m) = 20 \Rightarrow k + m = 4 \end{array}$$

I. denklemde yerine yazdığımızda

$$4 + 2l = 6 \Rightarrow 2l = 2$$

$$l = 1$$

O halde $k + l + m = 4 + 1 = 5$ bulunur.

Cevap: E

$$50. \begin{array}{l} 2x + y = z \\ x + z = 3y \\ 2x + y + x = 3y \\ 3x = 2y \Rightarrow x = 2k \text{ ve } y = 3k \\ 2 \cdot 2k + 3k = z \Rightarrow z = 7k \\ x + y + z = 12 \\ 2k + 3k + 7k = 12 \\ 12k = 12 \Rightarrow k = 1 \\ z = 7k \Rightarrow z = 7 \text{ bulunur.} \end{array}$$

Cevap: E

$$51. \frac{a+1}{a} = x \Rightarrow 1 + \frac{1}{a} = x \Rightarrow \frac{1}{a} = x - 1$$

$$\frac{b-1}{b} = y \Rightarrow 1 - \frac{1}{b} = y \Rightarrow \frac{1}{b} = 1 - y$$

$$\frac{1}{a} + \frac{1}{b} = x - 1 + 1 - y = x - y$$

Cevap: C

$$52. \frac{1-2x^3}{x^m} + \frac{2-3x}{x^{m-3}} + \frac{3}{x^{m-4}}$$

$$= \frac{1-2x^3 + (2-3x)x^3 + 3 \cdot x^4}{x^m}$$

$$= \frac{1-2x^3 + 2x^3 - 3x^4 + 3x^4}{x^m}$$

$$= \frac{1}{x^m} \text{ bulunur.}$$

Cevap: A

$$53. \frac{x-y}{x+y} \cdot \frac{4x+2y}{2x^2-xy-y^2}$$

$$= \frac{x-y}{x+y} \cdot \frac{2(2x+y)}{(2x+y)(x-y)}$$

$$= \frac{2}{x+y}$$

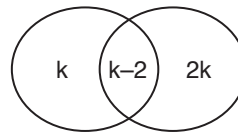
Cevap: C

$$54. n(A \cap B) = k - 2$$

$$n[A - (A \cap B)] = k$$

$$n[B - (A \cap B)] = 2k$$

$$n(A \cup B) = 54$$



$$n(A) = 2k - 2$$

$$= 28 - 2 = 26 \text{ bulunur.}$$

$$k + k - 2 + 2k = 54$$

$$4k - 2 = 54$$

$$4k = 56$$

$$k = 14$$

Cevap: B

55. $A = \{x \mid 0 < x \leq 10; x \in \mathbb{Z}^+\}$
 $B = \{y \mid y = 2k; 0 < k \leq 10; x \in \mathbb{Z}^+\}$
 $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $B = \{2, 4, 6, 8, 10\}$
 $(A \cap B) = \{2, 4, 6, 8, 10\}$
 $n(A \cap B) = 5$ bulunur.

Cevap: B

56. $A = \{x \mid x \in \mathbb{Z}, 1 \leq x \leq 50\}$
 $B = \{y \mid y \in \mathbb{Z}, 1 \leq y^2 \leq 50\}$
 $A = \{1, 2, 3, \dots, 50\}$
 $B = \{1, 4, 9, 16, 25, 36, 49\}$
 $n(A) = 50 \quad n(B) = 7$
 $n(A - B) = 50 - 7 = 43$

Cevap: C

57. $\begin{cases} a \cdot b = 3 \\ b \cdot c = \frac{2}{3} \\ a \cdot c = \frac{4}{3} \end{cases} \Rightarrow \begin{cases} \frac{a \cdot b}{b \cdot c} = \frac{3}{\frac{2}{3}} \\ \frac{a}{c} = \frac{9}{2} \end{cases}$
 $\frac{b \cdot c}{a \cdot c} = \frac{\frac{2}{3}}{\frac{4}{3}} \Rightarrow \frac{b}{a} = \frac{1}{2}$
 $\frac{a}{c} = \frac{9 \cdot 2k}{2 \cdot 2k} \quad \frac{b}{a} = \frac{1 \cdot 9k}{2 \cdot 9k} \quad (k \in \mathbb{Z}^+)$
 $\frac{a}{c} = \frac{18k}{4k} \quad \frac{b}{a} = \frac{9k}{18k}$
 $a = 18k, \quad b = 9k, \quad c = 4k$
 $a > b > c$ bulunur.

Cevap: A

58. $a + b = 2$
 $b + c = \frac{5}{4}$
 $a + c = \frac{9}{4}$

 $2(a + b + c) = 2 + \frac{5}{4} + \frac{9}{4}$
 $\bullet \quad a + b + c = \frac{22}{8}$ bulunur.
 \swarrow
 $2 + c = \frac{22}{8} \Rightarrow c = \frac{22}{8} - 2$
 $c = \frac{6}{8} = \frac{3}{4}$
 $\bullet \quad a + \frac{5}{4} = \frac{22}{8}$
 $a = \frac{22}{8} - \frac{5}{4} = \frac{12}{8} = \frac{3}{2}$
 $\frac{c}{a} = \frac{\frac{3}{4}}{\frac{3}{2}} = \frac{1}{2}$ bulunur.

Cevap: E

59. $\frac{1}{3^x + 1} + \frac{8}{9^x - 1} = \frac{1}{5}$
 $\frac{3^x - 1 + 8}{9^x - 1} = \frac{1}{5}$
 $5 \cdot 3^x + 35 = 9^x - 1 \quad (3^x = a \text{ olsun})$
 $5a + 35 = a^2 - 1$
 $a^2 - 5a - 36 = 0$
 $(a + 4)(a - 9) = 0$
 $a = -4$ ve $a = 9$ olur.
 $3^x = 9 \Rightarrow 3^x = 3^2$
 $x = 2$ bulunur.

Cevap: C

60. • $\frac{a+b}{2} = 1 \Rightarrow a+b=2 \Rightarrow \boxed{b=2-a}$
 • $a-c=-2 \Rightarrow a-c=-2 \Rightarrow \boxed{c=a+2}$
 • $(\sqrt{b \cdot c} = 2)^2 \Rightarrow b \cdot c = 4$
 $(2-a)(2+a) = 4$
 $4 - a^2 = 4$
 $a^2 = 0$
 $a = 0$

Cevap: B

61. $3^a \cdot 4^{-b} = 4$
 x $3^{-b} \cdot 4^a = 36$

 $3^{a-b} \cdot 4^{a-b} = 144$
 $(3 \cdot 4)^{a-b} = 12^2$
 $12^{a-b} = 12^2 \Rightarrow a-b=2$

Cevap: D

62. $\frac{x^3}{x^2} + \frac{2}{x^2} = \frac{3x^2}{x^2}$
 $3 \mid x + \frac{2}{x^2} = 3$
 $3x + \frac{6}{x^2} = 9$

Cevap: B

63. $x^2 + y^2 - 2xy - 4 = 0$
 \downarrow
 $(x-y)^2 - 2^2 = 0$
 $(x-y-2)(x-y+2) = 0$
 $x-y=2 \quad x-y=-2$
 $\Rightarrow |x-y| = 2$ olur.

Cevap: D

64. $\frac{\sqrt{-x+2\sqrt{x-1}}}{0} + \frac{\sqrt{y-\sqrt{2y-1}}}{0} = 0$
 $\Rightarrow -x+2\sqrt{x-1} = 0 \Rightarrow (2\sqrt{x-1} = x)^2$
 $4(x-1) = x^2$
 $4x-4 = x^2$
 $x^2-4x+4 = 0$
 $(x-2)^2 = 0$
 $x = 2$
 $\Rightarrow y - \sqrt{2y-1} = 0 \Rightarrow (y = \sqrt{2y-1})^2$
 $y^2 = 2y - 1$
 $y^2 - 2y + 1 = 0$
 $(y-1)^2 = 0 \Rightarrow y = 1$
 $\Rightarrow x+y = 2+1 = 3$

Cevap: B

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65. $5 + 10 + 15 + \dots + 40 - 4 - 8 - 12 - \dots - 32$
 $= 5(1 + 2 + 3 + \dots + 8) - 4(1 + 2 + 3 + \dots + 8)$
 $= (1 + 2 + 3 + \dots + 8)(5 - 4)$
 $= 1 + 2 + 3 + \dots + 8$
 $= \frac{8 \cdot 9}{2} = 36$

Cevap: C

66. $(35)_{10} = (x)_8$

$$\begin{array}{r|l} 35 & 8 \\ - 32 & \textcircled{4} \\ \hline & \textcircled{3} \end{array} \Rightarrow = 43$$

Cevap: D

67. $f(x) = x + 1$ ve $g(x) = x^2 - 1$
 • $(g \circ f)(a) = g(f(a)) = g(a + 1) = (a + 1)^2 - 1 = 35$
 $(a + 1)^2 = 36$
 $a + 1 = 6 \quad a + 1 = -6$
 $a = 5 \quad a = -7$

Cevap: D

$$68. f^{-1}(0) = a \Rightarrow f(a) = 0$$

$$\Rightarrow f(a) = \frac{(a-3)^3}{4} = 0$$

$$(a-3)^3 = 0$$

$$a-3 = 0$$

$$a = 3 \text{ olur.}$$

Cevap: C

$$69. f(x) = ax + b$$

$$f(1) = a + b = -2$$

$$f(2) = 2a + b = 1$$

$$\begin{array}{r} -/ \quad a + b = -2 \\ + \quad 2a + b = 1 \\ \hline \quad \quad \quad a = 3 \end{array} \quad \rightarrow \quad \begin{array}{r} 6 + b = 1 \\ \quad \quad \quad b = -5 \end{array}$$

$$\Rightarrow f(x) = 3x - 5$$

$$f(3) = 3 \cdot 3 - 5 = 4 \text{ olur.}$$

Cevap: D

$$70. 2x^2 - (m-1)x - (4-m) = 0$$

$$\bullet \quad x_1 = \frac{1}{x_2} \Rightarrow x_1 \cdot x_2 = 1$$

$$\bullet \quad x_1 \cdot x_2 = 1$$

$$\frac{-(4-m)}{2} = 1 \Rightarrow -4 + m = 2$$

$$m = 6$$

Cevap: E

$$71. a(x+1)^2 - x + 1 = 8$$

$$a(x^2 + 2x + 1) - x + 1 - 8 = 0$$

$$ax^2 + 2ax + a - x - 7 = 0$$

$$ax^2 + (2a-1)x + a - 7 = 0$$

$$x_1 \cdot x_2 = \frac{a-7}{a} \times \frac{-2}{5}$$

$$5a - 35 = -2a$$

$$7a = 35$$

$$a = 5$$

Cevap: D

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$$72. p(x) = 3x^3 - 2mx^2 - nx - 2 = (x^2 - x - 2) \cdot Q(x)$$

$$p(x) = 3x^3 - 2mx^2 - nx - 2 = (x-2)(x+1) \cdot Q(x)$$

$$\Rightarrow p(2) = 0 \quad \text{ve} \quad p(-1) = 0 \text{ dir.}$$

$$\bullet \quad p(2) = 3 \cdot 2^3 - 2m \cdot 2^2 - n \cdot 2 - 2 = 0$$

$$24 - 8m - 2n - 2 = 0$$

$$8m + 2n = 22 \Rightarrow \boxed{4m + n = 11}$$

$$\bullet \quad p(-1) = 3(-1)^3 - 2m(-1)^2 - n(-1) - 2 = 0$$

$$-3 - 2m + n - 2 = 0$$

$$\boxed{n - 2m = 5}$$

$$\Rightarrow \quad -/ \quad 4m + n = 11$$

$$+ \quad n - 2m = 5 \quad \rightarrow \quad 4 + n = 11$$

$$\hline \quad \quad \quad 6m = 6$$

$$\quad \quad \quad n = 7$$

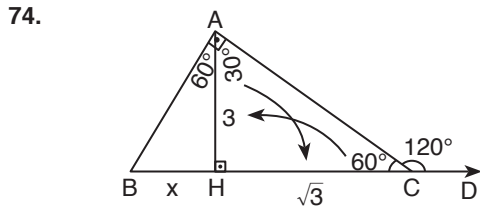
$$m = 1$$

$$\Rightarrow 8m - n = 8 - 7 = 1 \text{ olur.}$$

Cevap: D

73. • $P(x) = x^2 + 5x - 3$
 $P(2) = 2^2 + 5 \cdot 2 - 3 = 11$
 $P(0) = 0^2 + 5 \cdot 0 - 3 = -3$
- $Q(x) = x + 1$
 $Q(11) = 11 + 1 = 12$
 $Q(-1) = -1 + 1 = 0$
- $\Rightarrow P[Q(-1)] + Q[P(2)]$
 $P(0) + Q(11)$
 $-3 + 12 = 9$

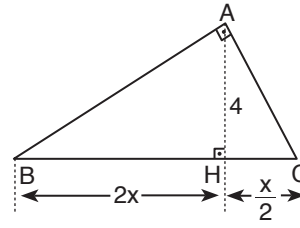
Cevap: C



- $m(\widehat{ACB}) = 60^\circ \Rightarrow |AH| = 3$
 $m(\widehat{HAC}) = 30^\circ \Rightarrow |HC| = \frac{|AH|}{\sqrt{3}} = \frac{3}{\sqrt{3}} = \sqrt{3} \text{ cm}$
- $3^2 = x \cdot \sqrt{3}$
 $9 = x \cdot \sqrt{3} \Rightarrow x = 3\sqrt{3} \text{ cm}$
- $A(ABC) = \frac{(x + \sqrt{3}) \cdot 3}{2} = \frac{(3\sqrt{3} + \sqrt{3}) \cdot 3}{2}$
 $= \frac{12\sqrt{3}}{2} = 6\sqrt{3}$

Cevap: A

75.



$$\Rightarrow 4^2 = 2x \cdot \frac{x}{2}$$

$$16 = x^2$$

$$x = 4$$

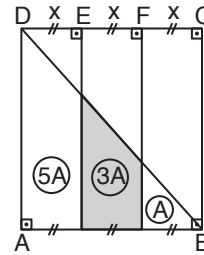
$$\Rightarrow |BC| = 2x + \frac{x}{2} = 2 \cdot 4 + \frac{4}{2} = 8 + 2 = 10$$

$$\text{Alan}(ABC) = \frac{|BC| \cdot 4}{2} = \frac{10 \cdot 4}{2} = 20 \text{ cm}^2$$

Cevap: D

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76.



$$\text{Alan}(DAB) = \frac{A(ABCD)}{2}$$

$$9A = \frac{A(ABCD)}{2} \rightarrow A(ABCD) = 18A = (3x)^2$$

$$18A = 9x^2$$

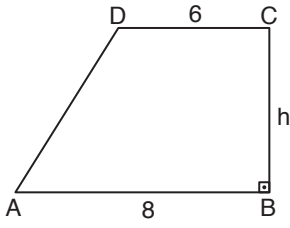
$$\frac{x^2}{2} = A$$

$$\Rightarrow 3A = 3 \cdot \frac{x^2}{2} = \frac{3x^2}{2}$$

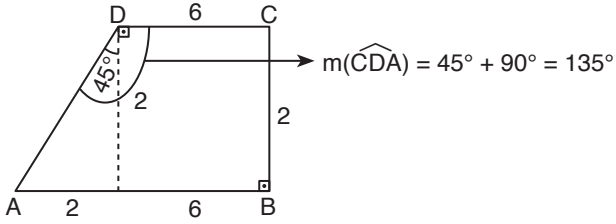
$$k = \frac{3}{2}$$

Cevap: B

77.

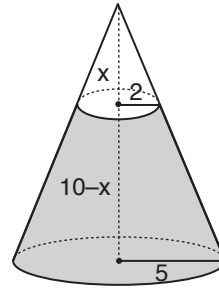


$$14 = \frac{6+8}{2} \cdot h \Rightarrow h = 2$$



Cevap: D

79.



$$\begin{aligned} \rightarrow \frac{x}{10} &= \frac{2}{5} \\ 5x &= 20 \\ x &= 4 \end{aligned}$$

$$V = \frac{1}{3} \pi \cdot 5^2 \cdot 10 - \frac{1}{3} \pi \cdot 2^2 \cdot 4$$

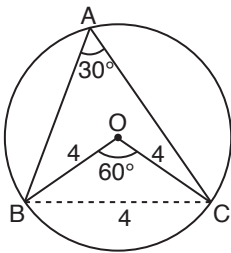
$$V = \frac{1}{3} \pi (250 - 16)$$

$$V = \frac{1}{3} \pi \cdot 234 = 78\pi$$

Cevap: E

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78.



$$m(\widehat{BAC}) = \frac{m(\widehat{BOC})}{2}$$

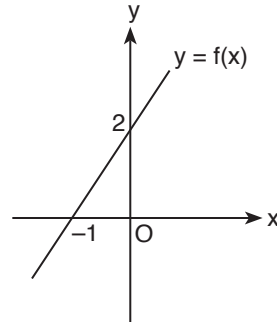
$$\Rightarrow 30^\circ = \frac{m(\widehat{BOC})}{2}$$

$$m(\widehat{BOC}) = 60^\circ$$

$|OB| = |OC|$ ve $m(\widehat{BOC}) = 60^\circ$
 $\Rightarrow |OB| = |OC| = |BC| = 4$ cm olur.

Cevap: C

80.



$$\frac{x}{-1} + \frac{f(x)}{2} = 1$$

$$-2x + f(x) = 2$$

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

Cevap: A