

1. Soldan birinci harf bütün kelimelerde incelendiğinde 3 tane A o halde $A = 1$ olur.

Baştan 1 sondan 2 tane K olan $K = 4$

Buradan $Z = 8$, $F = 7$, $T = 3$, $R = 5$

ARTK → 1 5 3 4

ZATF → 8 1 3 7

ZRKF → 8 5 4 7

ARFT → 1 5 7 3

ATKK → 1 3 4 4

ZRKF → 8 5 4 7

Cevap: E

2. Soldan birinci şekil \emptyset üç tane rakamlar olan soldan birinci üç tane $\emptyset = 8$

Soldan ikinci şekil aynı olan β iki tane rakamlardan karşılığı $\beta = 9$, buradan $\gamma = 6$

$\epsilon = 5$, $\oplus = 1$, $\alpha = 7$ olur.

$\epsilon \beta \alpha \gamma \rightarrow 5 9 7 6$

$\gamma \beta \epsilon \alpha \rightarrow 6 9 5 7$

$\emptyset \alpha \epsilon \alpha \rightarrow 8 7 5 7$

$\emptyset \gamma \oplus \gamma \rightarrow 8 6 1 6$

$\emptyset \epsilon \oplus \beta \rightarrow 8 5 1 9$

$\emptyset \alpha \epsilon \alpha = 8757$

Cevap: B

3. I. $x \diamond y = \begin{cases} \text{mod } 7 & y \equiv 2 & 4x + 5 \\ \text{mod } 7 & x \equiv 0 & x.y + 3 \end{cases}$

II. $(4 \diamond 2) \diamond 3 = ?$

$(4 \diamond 2) = 4x + 5 = 16 + 5 = 21$

$21 \diamond 3 = x.y + 3 = 21.3 + 3 = 66$

Cevap: D

4. I. $1 + \frac{1}{3 + \frac{1}{a \blacksquare b}} = 2ab$

II. $2 \blacksquare 4 = ?$

$2 \blacksquare 4 = x$ olsun. $a = 2$ ve $b = 4$

$$1 + \frac{1}{3 + \frac{1}{x}} = 2.2.4$$

$$1 + \frac{x}{3x + 1} = 16$$

$$\frac{x}{3x + 1} = 15$$

$$45x + 15 = x$$

$$44x = -15$$

$$2 \blacksquare 4 = x = \frac{-15}{44} \text{ bulunur.}$$

Cevap: B

5. I. $7 \bullet 9 = 8$

II. $8 \bullet 4 = 6$

III. $9 \bullet 5 = 7$

IV. $7 \bullet 3 = ?$

Toplamlarının yarısı

$$7 \bullet 9 = \frac{7+9}{2} = 8$$

$$8 \bullet 4 = \frac{8+4}{2} = 6$$

$$9 \bullet 5 = \frac{9+5}{2} = 7$$

$$7 \bullet 3 = \frac{7+3}{2} = 5 \text{ bulunur.}$$

Cevap: D

6. I. $(a, b) \star (c, d) = \left(\frac{a}{3} + c, \frac{d}{2} - 2b\right)$

II. $(6, 1) \star (4, 8) = (x, y) \star (7, 2)$

III. $x + y = ?$

$a = 6, \quad b = 1, \quad c = 4, \quad d = 8$

$a = x, \quad b = y, \quad c = 7, \quad d = 2$

O halde işlemde yerine yazalım.

$$\left(\frac{6}{3} + 4, \frac{8}{2} - 2 \cdot 1\right) = \left(\frac{x}{3} + 7, \frac{2}{2} - 2 \cdot y\right)$$

$$(6, 2) = \left(\frac{x}{3} + 7, 1 - 2y\right)$$

$$\frac{x}{3} + 7 = 6 \quad \text{ve} \quad 1 - 2y = 2$$

$$\frac{x}{3} = -1 \quad -1 = 2y$$

$$x = -3 \quad \frac{-1}{2} = y$$

$$x + y = -3 - \frac{1}{2} = -\frac{7}{2} \text{ bulunur.}$$

Cevap: C

7. $\boxed{\dots} \rightarrow I$

$$\begin{array}{r} x \ 32 \\ \dots \\ + 636 \\ \hline \end{array}$$

işleminde $I = 636 \div 3 = 212$ olur.

$$\begin{array}{r} 212 \\ x \ 32 \\ \hline 424 \\ + 636 \\ \hline 6784 \end{array} \text{ bulunur.}$$

8. xyz

$$\begin{array}{r} + \ xzy \\ \hline 965 \end{array}$$

işleminde $x = 4$ olur.

$y + z = 15$ olur.

$\min(z - x)$ olması için $z = 6$ alınabilir.

$$z - x = 6 - 4 = 2$$

Cevap: B

9.

+	a	b	c	d	e
a					
b	2e			a+1	
c	2b		b		
d					a+c
e					

$b = 4$

$$\frac{a \cdot c}{b + d + e} = ?$$

tablodan $b + a = 2e$, $b + d = a + 1$

$c + a = 2b$, $c + c = b$, $d + e = a + c$

$b = 4$ olduğundan

- $2c = b \Rightarrow 2c = 4 \Rightarrow c = 2$
- $c + a = 2b \Rightarrow 2 + a = 8 \Rightarrow a = 6$
- $b + d = a + 1 \Rightarrow 4 + d = 6 + 1 \Rightarrow d = 3$
- $d + e = a + c \Rightarrow 3 + e = 6 + 2 \Rightarrow e = 5$

o halde $\frac{a \cdot c}{b + d + e} = \frac{6 \cdot 2}{4 + 3 + 5} = \frac{12}{12} = 1$ bulunur.

Cevap: E

10.

x	a	b	c
a		48	96
b			72

$a + b + c = ?$

$$a \cdot b = 48 \Rightarrow \frac{b}{c} = \frac{48}{96} = \frac{1}{2}$$

$$a \cdot c = 96 \Rightarrow \frac{a}{b} = \frac{96}{72} = \frac{4}{3}$$

$$b \cdot c = 72 \Rightarrow \frac{b}{c} = \frac{3k}{6k} \text{ ve } \frac{a}{b} = \frac{4k}{3k}$$

$k = 2$ için $a = 8$, $b = 6$, $c = 12$

$a + b + c = 8 + 6 + 12 = 26$ bulunur.

Cevap: A

11.

x	a	b	
a	c+29		
b		c-15	

+	a	b	c
a		11	
b			

$a - b = ?$

I. tablodan

$a.a = c + 29,$

$b.b = c - 15$

$a^2 = c + 29$

$b^2 = c - 15$

II. tablodan

$(a + b) = (11)$

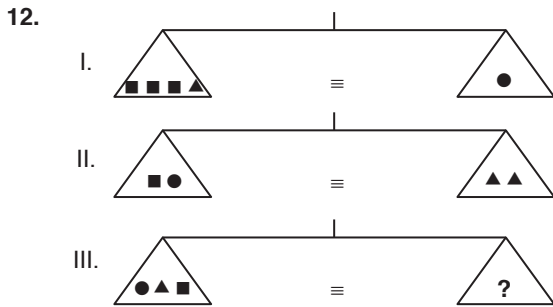
$a^2 - b^2 = c + 29 - c + 15$

$(a - b)(a + b) = 44$

$\underbrace{11}$

$a - b = 4$ bulunur.

Cevap: D



■ = x, ▲ = y, ● = z

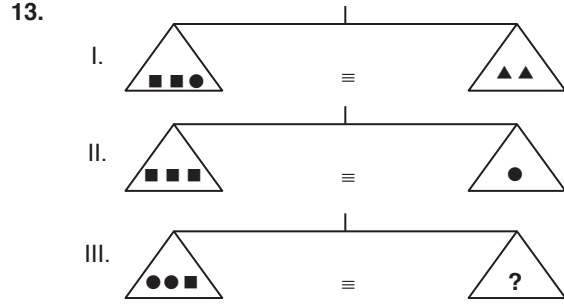
I. $3x + y = z$

II. $x + z = 2y$

III. $x + y + z = ?$

$3y = \text{▲▲▲}$ olabilir.

Cevap: D



■ = x, ● = y, ▲ = z

I. $2a + b = 2c$

II. $3a = b$

III. $2b + a = ?$

• $2b + a = 2.3a + a = 7a$

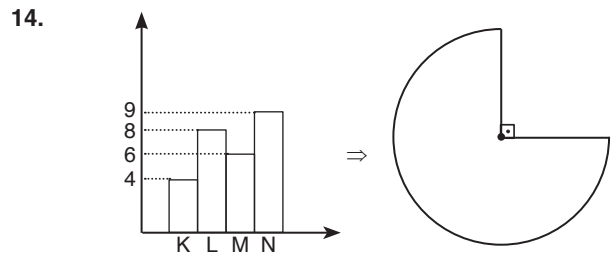
• $2a + b = 2c \Rightarrow 2a + 3a = 2c \Rightarrow 2c = 5a$

O halde

$7a = 5a + 2a = 2c + 2a$ olabilir.

▲▲■

Cevap: C



$K^\circ = ?$ $L^\circ = ?$ $M^\circ = ?$ $N^\circ = ?$

Şeklindeki 90° 'yi almadığımızda şeklimiz $360 - 90 = 270^\circ$

$K = 4a,$ $L = 8a,$ $M = 6a$ ve $N = 9a$

$4a + 8a + 6a + 9a = 270^\circ$

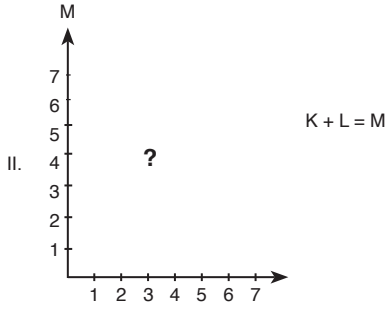
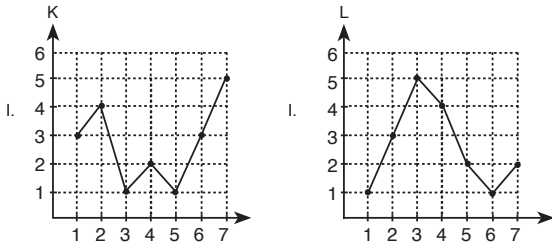
$27a = 270^\circ$

$a = 10^\circ$

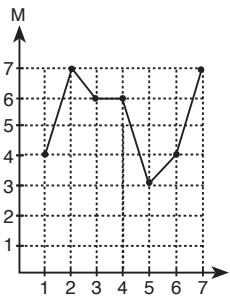
$K = 40^\circ,$ $L = 80^\circ,$ $M = 60^\circ$ ve $N = 90^\circ$ olur.

Cevap: E

15.

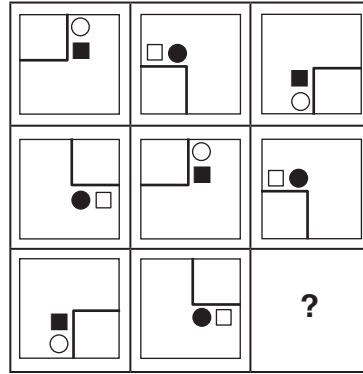


	K	+	L	=	M
1.	3		1	=	4
2.	4		3	=	7
3.	1		5	=	6
4.	2		4	=	6
5.	1		2	=	3
6.	3		1	=	4
7.	5		2	=	7

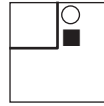


Cevap: E

16.



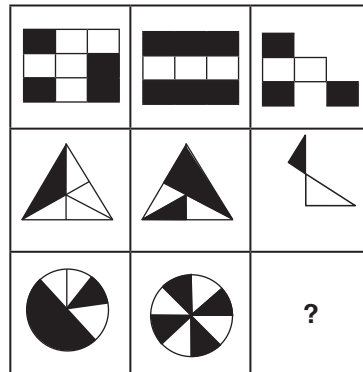
Şekil incelendiğinde içindeki kare saatin ters yönünde köşelere ilerliyor. Daire ve karede her köşede renk değişiyor.



Cevap: C

TASARI EĞİTİM YAYINLARI

17.

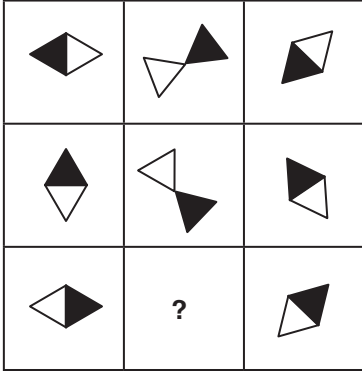


Soldaki şeklin üzerine sağdaki şekil konuluyor çakışan siyahlıklar alınıyor.



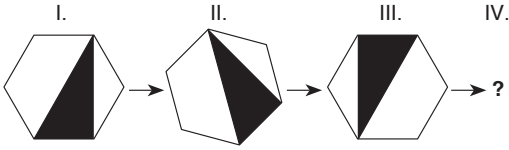
Cevap: C

18.



Cevap: A

19.

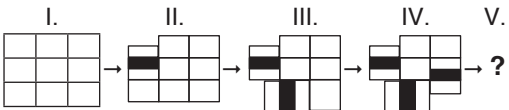


- I. adımdan II. adıma bir kenar
- II. adımdan III adıma iki kenar
- III. adımdan IV adıma üç kenar



Cevap: B

20.



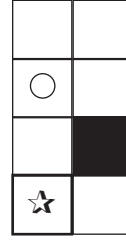
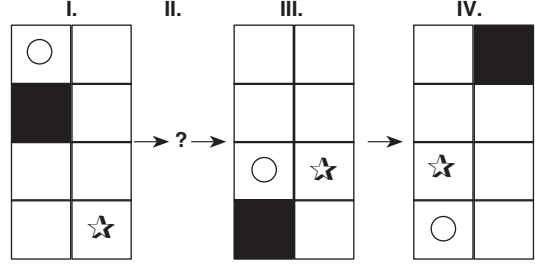
Her şekilde siyahlık iki kenar ilerlemekte ve siyahlaştırmakta

O halde seçeneğimiz A olur.



Cevap: A

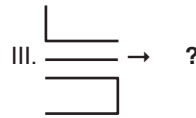
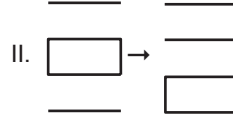
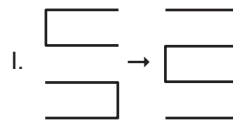
21.



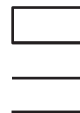
Cevap: B

TASARI EĞİTİM YAYINLARI

22.

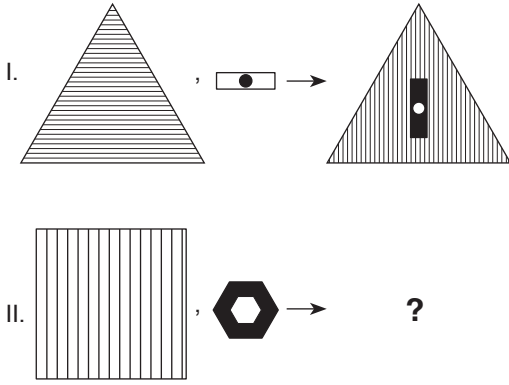


Yukarıdaki kenar çizgi bir adım aşağıya
aşağıdaki kenar çizgi bir adım yukarı hareket etmekte.

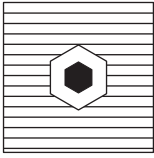


Cevap: B

23.

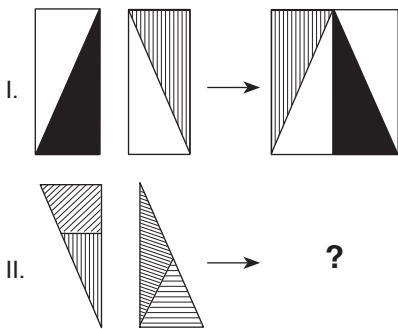


Sağdaki soldaki şeklin içine dik şekilde yerleştirilmekte beyazlar siyah siyahlar beyaz olmakta Şeklimiz D seçeneği olur.

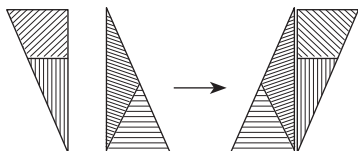


Cevap: D

24.

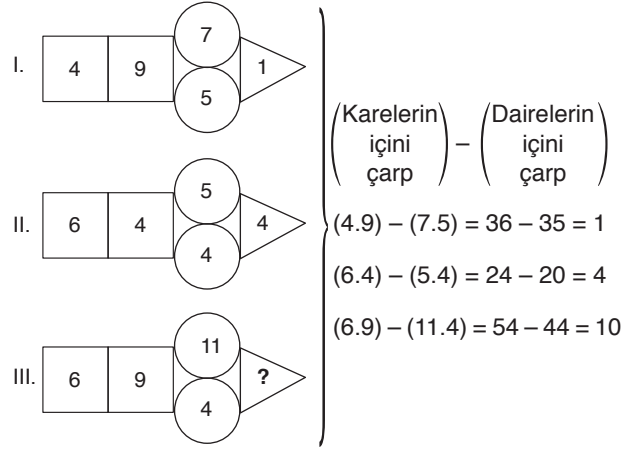


Şekiller simetri olacak şekilde yer değiştiriyor. O halde.



Cevap: E

25.



$$\left(\begin{matrix} \text{Karelerin} \\ \text{içini} \\ \text{çarp} \end{matrix} \right) - \left(\begin{matrix} \text{Dairelerin} \\ \text{içini} \\ \text{çarp} \end{matrix} \right)$$

$$(4.9) - (7.5) = 36 - 35 = 1$$

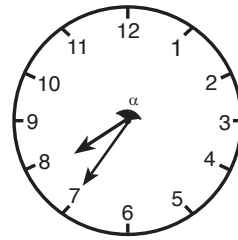
$$(6.4) - (5.4) = 24 - 20 = 4$$

$$(6.9) - (11.4) = 54 - 44 = 10$$

Cevap: C

TASARI EĞİTİM YAYINLARI

26.



$$\alpha = \left| \frac{11. \text{ dakika} - 60. \text{ saat}}{2} \right|$$

$$\alpha = \left| \frac{11.34 - 60.7}{2} \right|$$

$$\alpha = \left| \frac{374 - 420}{2} \right|$$

$$\alpha = 23^\circ$$

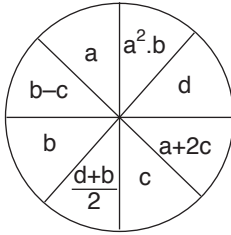
Cevap: A

27 - 29. soruları aşağıdaki şekle göre cevaplayınız.

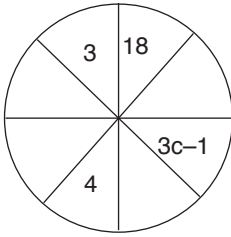
Answers questions 27 - 29 accordance with the figure given below.

Her soru birbirinden bağımsız olarak cevaplanacaktır.

Each question is to be answered independently.



27.



$$a = 3 \quad a^2 \cdot b = 18 \quad \frac{d+b}{2} = 4 \quad a + 2c = 3c - 1$$

$$9 \cdot b = 18 \quad \frac{d+2}{2} = 4 \quad 3 + 1 = c$$

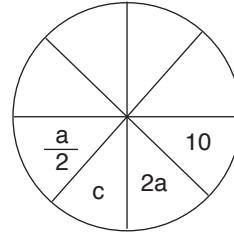
$$b = 2 \quad d + 2 = 8 \quad c = 4$$

$$d = 6$$

$$\frac{a \cdot c}{d \cdot b} = \frac{3 \cdot 4}{6 \cdot 2} = \frac{12}{12} = 1$$

Cevap: A

28.



$$\frac{a}{2} = b \quad \frac{d+b}{2} = c \quad c = 2a$$

$$\downarrow \quad \downarrow$$

$$\frac{2}{2} = b \Rightarrow b = 1 \quad \frac{d+1}{2} = 4$$

$$d + 1 = 8$$

$$d = 7 \text{ bulunur.}$$

$$\underline{c = 4} \quad \underline{a = 2}$$

$$a + 2a = 10$$

$$a + 4a = 10$$

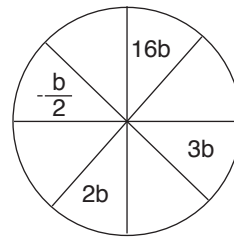
$$5a = 10$$

$$\underline{a = 2}$$

Cevap: E

TASARI EĞİTİM YAYINLARI

29.



$$b - c = \frac{b}{2} \quad a^2 \cdot b = 16 \cdot b \quad a + 2c = 3b \quad \frac{d+b}{2} = 2b$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

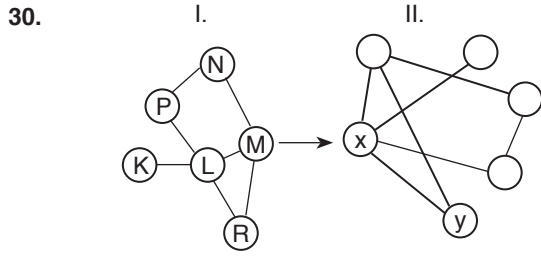
$$2b - 2c = b \quad a^2 = 16 \quad 4 + b = 3b \quad d + b = 4b$$

$$b = 2c \quad a = 4 \quad 4 = 2b \quad d = 3b$$

$$\text{ve } 2 = 2c \Rightarrow c = 1 \quad 2 = b \quad d = 6$$

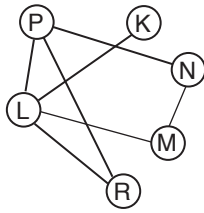
$$a + b + c + d = 4 + 2 + 1 + 6 = 13 \text{ bulunur.}$$

Cevap: A



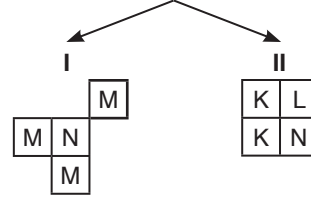
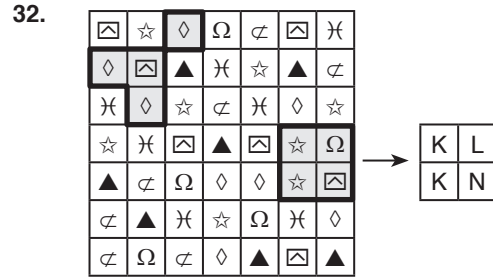
x = ? y = ?

İkinci şekil



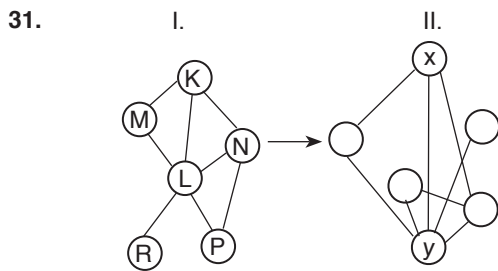
x → L
y → R

Cevap: A



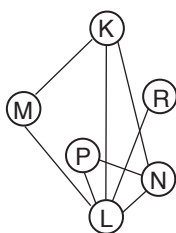
M = ◇ K = ☆
N = ☒ L = Ω

Cevap: A



x = ? y = ?

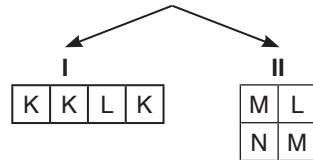
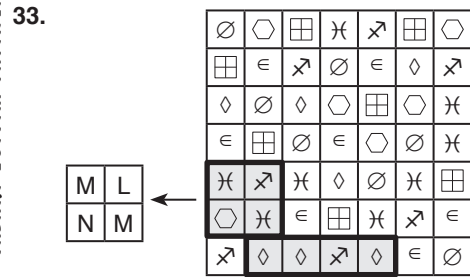
ikinci şekil



x → K
y → L

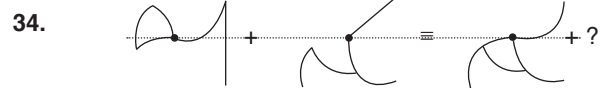
Cevap: D

TASARI EĞİTİM YAYINLARI

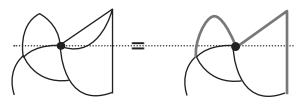


K = ◇ M = ✕
L = ↗ N = ○

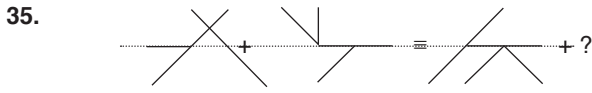
Cevap: E



Sol taraf



Cevap: D



Şekiller birleştirildiğinde sağdaki şekilde A seçeneği eksik.



Cevap: A



I. saat 2:27

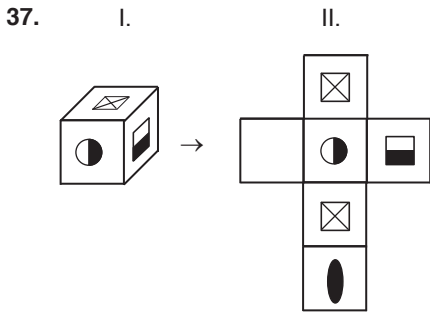
II. saat 3:09

Fark $3:09 - 2:27 = 42$ dk eklenmekte

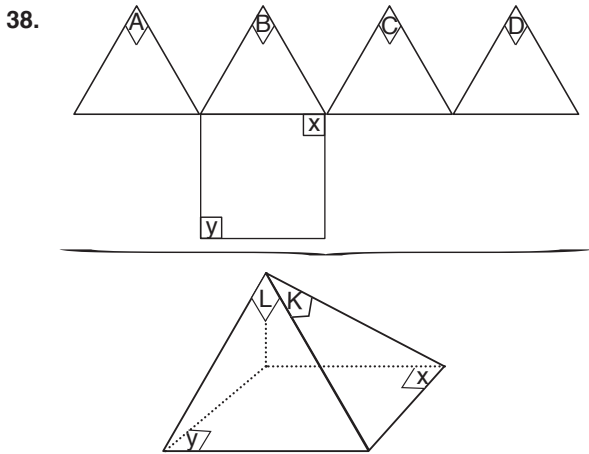
O halde x

$4:33 + 0:42 = 5:15$ bulunur.

Cevap: D



Cevap: A



K = C

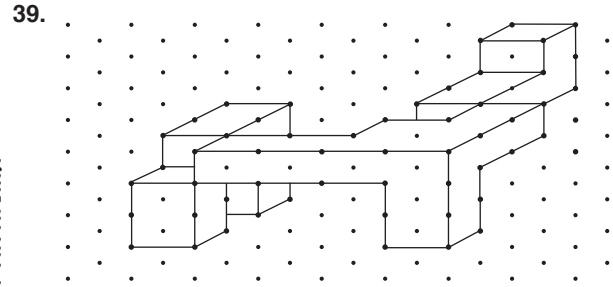
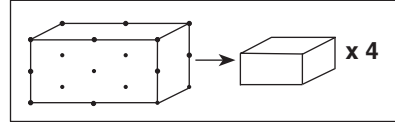
L = D

Cevap: D

39 - 40. soruları örnekte verilen ilişkiye göre cevaplayınız.

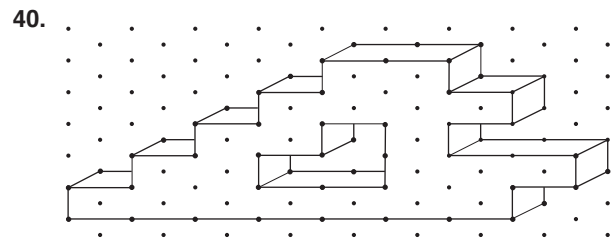
In questions 39 – 40, find the correct answer in accordance with the relationship established in the example below

ÖRNEK
EXAMPLE



Şekildeki noktaları birleştirdiğimizde şeklimizde 19 küp oluşmakta

Cevap: C



Şekildeki noktaları birleştirdiğimizde şeklimizde 21 küp oluşur.

Cevap: C

$$\begin{aligned}
 41. \quad 3 - \frac{\left(\frac{1}{3} - 1\right) : \frac{1}{3}}{\left(\frac{1}{4} - 1\right) : \frac{3}{4}} &= 3 - \frac{-\frac{2}{3} : \frac{1}{3}}{-\frac{3}{4} : \frac{3}{4}} \\
 &= 3 - \frac{-\frac{2}{3} \cdot \frac{3}{1}}{-1} \\
 &= 3 - \frac{-2}{-1} \\
 &= 3 - 2 = 1 \text{ bulunur.}
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 42. \quad \left(\frac{864 + 8,64}{86,4}\right) : \left(\frac{432 + 4,32}{43,2}\right) \\
 &= \left(\frac{864}{86,4} + \frac{8,64}{86,4}\right) : \left(\frac{432}{43,2} + \frac{4,32}{43,2}\right) \\
 &= \left(\frac{8640}{864} + \frac{864}{8640}\right) : \left(\frac{4320}{432} + \frac{432}{4320}\right) \\
 &= \left(10 + \frac{1}{10}\right) : \left(10 + \frac{1}{10}\right) \\
 &= 1 \text{ bulunur.}
 \end{aligned}$$

Cevap: A

$$\begin{aligned}
 43. \quad \left(\left(-\frac{3}{4}\right)^{-2}\right)^3 \cdot \left(\left(\frac{4}{3}\right)^3\right)^{-2} \\
 &= \left(-\frac{3}{4}\right)^{-6} \cdot \left(\frac{4}{3}\right)^{-6} \\
 &= \left(\frac{4}{3}\right)^6 \cdot \left(\frac{3}{4}\right)^6 = \left(\frac{4}{3} \cdot \frac{3}{4}\right)^6 \\
 &= 1^6 \\
 &= 1 \text{ bulunur.}
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 44. \quad \frac{3^{24} - 3^{12}}{(3^6 + 1)(3^6 - 1)} &= \frac{3^{12}(3^{12} - 1)}{(3^6)^2 - 1} \\
 &= \frac{3^{12} \cancel{(3^{12} - 1)}}{\cancel{(3^{12} - 1)}} \\
 &= 3^{12}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 45. \quad \left(-\frac{1}{2}\right)^{1-2n} \cdot (-2)^{2n+1} \cdot \left(\frac{1}{16}\right)^{-n} &= 256 \\
 -2^{2n-1} \cdot -2^{2n+1} \cdot \left(\frac{1}{2^4}\right)^{-n} &= 256 \\
 -2^{2n-1} \cdot -2^{2n+1} \cdot 2^{4n} &= 256 \\
 2^{8n} &= 2^8 \\
 8n = 8 &\Rightarrow n = 1
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 46. \quad \frac{\frac{8}{\sqrt{5}-1} + \frac{4}{\sqrt{3}+1}}{\frac{1}{\sqrt{8}-2\sqrt{15}}} \\
 &= \frac{\frac{8(\sqrt{5}+1)}{(\sqrt{5})^2-(1)^2} + \frac{4(\sqrt{3}-1)}{(\sqrt{3})^2-(1)^2}}{\frac{1}{\sqrt{5}-\sqrt{3}}} \\
 &= \frac{\frac{8(\sqrt{5}+1)}{4} + \frac{4(\sqrt{3}-1)}{2}}{\frac{1}{\sqrt{5}-\sqrt{3}}} \\
 &= \frac{2\sqrt{5}+2+2\sqrt{3}-2}{\sqrt{5}-\sqrt{3}} = 2(\sqrt{5}+\sqrt{3}) \cdot (\sqrt{5}-\sqrt{3}) \\
 &= 2 \cdot (\sqrt{5})^2 - (\sqrt{3})^2 \\
 &= 2 \cdot (5-3) \\
 &= 2 \cdot 2 = 4 \text{ bulunur.}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 47. \quad \sqrt{a+1} - \sqrt{25a+25} + 3\sqrt{49a+49} &= 34 \\
 \sqrt{a+1} - \sqrt{25(a+1)} + 3\sqrt{49(a+1)} &= 34 \\
 \sqrt{a+1} - 5\sqrt{a+1} + 21\sqrt{a+1} &= 34 \\
 17\sqrt{a+1} &= 34 \\
 (\sqrt{a+1})^2 &= (2)^2 \\
 a+1 = 4 &\Rightarrow a = 3 \text{ bulunur.}
 \end{aligned}$$

Cevap: C

$$48. \frac{\sqrt{0,09} - \sqrt{0,04}}{\sqrt{0,09} + 0,04} = \frac{\sqrt{\frac{9}{100}} - \sqrt{\frac{4}{100}}}{\sqrt{\frac{9}{100}} + \frac{4}{100}}$$

$$\frac{\frac{3}{10} - \frac{2}{10}}{\frac{3}{10} + \frac{4}{100}} = \frac{\frac{1}{10}}{\frac{34}{100}} = \frac{1}{10} \cdot \frac{100}{34}$$

$$= \frac{5}{17}$$

Cevap: C

$$49. 3^{x+1} = 2 \Rightarrow 3^x \cdot 3 = 2$$

$$9^{x+2} = ? \quad 3^x = \frac{2}{3}$$

$$(3^2)^{x+2} = 3^{2x} \cdot 3^4$$

$$= (3^x)^2 \cdot 3^4$$

$$= \left(\frac{2}{3}\right)^2 \cdot 3^4 = \frac{4}{3^2} \cdot 3^4$$

$$= 4 \cdot 9$$

$$= 36 \text{ bulunur.}$$

Cevap: C

$$50. a, b, c \in \mathbb{Z}^+$$

$$5a + 6b + 4c = 94$$

a'nın en büyük olabilmesi için b ve c'nin en küçük değerleri kullanılır. Katsayısı büyük olana küçük değer kullanılır.

b = 1 ve c = 2 alınır.

$$5a + 6 \cdot 1 + 4 \cdot 2 = 94$$

$$5a + 6 + 8 = 94$$

$$5a = 94 - 14$$

$$5a = 80$$

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

Cevap: B

$$51. \frac{1080 - 1077}{3} + \frac{1075 - 1072}{3} + \dots + \frac{25 - 22}{3} = x$$

O halde

$$\left(\frac{1080 - 25}{5} + 1\right) \cdot 3 = x$$

$$212 \cdot 3 = x$$

$$636 = x \text{ bulunur.}$$

Cevap: D

$$52. a \cdot b = 15$$

$$b \cdot c = 18$$

$$\frac{2}{5}b \left(\frac{10}{3}a + \frac{15}{4}c\right) = \frac{2}{5} \cdot b \cdot \frac{10}{3} \cdot a + \frac{2}{5} \cdot b \cdot \frac{15}{4} \cdot c$$

$$= \frac{4}{3} \cdot b \cdot a + \frac{3}{2} \cdot b \cdot c$$

$$= \frac{4}{3} \cdot 15 + \frac{3}{2} \cdot 18$$

$$= 20 + 27 = 47 \text{ bulunur.}$$

Cevap: C

$$53. \frac{n! + (n+1)!}{(n+2)!} = \frac{1}{9}$$

$$\frac{n! + (n+1) \cdot n!}{(n+2) \cdot (n+1) \cdot n!} = \frac{1}{9}$$

$$\frac{n!(n+2)}{(n+2) \cdot (n+1) \cdot n!} = \frac{1}{9}$$

$$\frac{1}{n+1} = \frac{1}{9}$$

$$n+1 = 9$$

$$n = 8 \text{ bulunur.}$$

Cevap: D

$$54. x^{1007} < 0 \text{ ya } x < 0$$

$$\underbrace{|x|}_{-} + \underbrace{|5-x|}_{+} + \underbrace{|6-x|}_{+} + \underbrace{|7-x|}_{+} + \underbrace{|x-9|}_{-} = 1007$$

$$-x + 5 - x + 6 - x + 7 - x - x + 9 = 1007$$

$$-5x + 27 = 1007$$

$$-5x = 1007 - 27$$

$$-5x = 980$$

$$x = -196$$

Cevap: C

$$55. x < \frac{4}{3}$$

$$|4 - 3x| - \sqrt{9x^2 - 24x + 16} + 3x + 2 = 4$$

$$|4 - 3x| - \sqrt{(3x - 4)^2} + 3x + 2 = 4$$

$$\underbrace{|4 - 3x|}_{+} - \underbrace{|3x - 4|}_{-} + 3x + 2 = 4$$

$$4 - 3x + 3x - 4 + 3x + 2 = 4$$

$$3x = 2$$

$$x = \frac{2}{3} \text{ bulunur.}$$

Cevap: E

$$\begin{aligned}
 56. \quad x - \frac{3}{y} = 4 &\Rightarrow & x \cdot y - 3 &= 4y \\
 & & x \cdot y &= 4y + 3 \\
 y + \frac{9}{x} = 4 & & x \cdot y + 9 &= 4x \\
 & & x \cdot y &= 4x - 9 \\
 4y + 3 &= 4x - 9 \\
 3 + 9 &= 4x - 4y \\
 12 &= 4(x - y) \\
 3 &= x - y
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 57. \quad & \frac{1}{x} + \frac{2}{y} = \frac{11}{2} \\
 -2/ & \frac{3}{x} + \frac{1}{y} = 24 \\
 \hline
 & \frac{1}{x} + \frac{2}{y} = \frac{11}{2} \\
 + & \frac{-6}{x} - \frac{2}{y} = -48 \\
 \hline
 & \frac{-5}{x} = \frac{-85}{2} \\
 & x = \frac{17}{2} \\
 \frac{17}{2} + \frac{2}{y} &= \frac{11}{2} \Rightarrow \frac{2}{y} = \frac{11}{2} - \frac{17}{2} = \frac{-6}{2} \\
 & \frac{1}{y} = \frac{-3}{2} \\
 \frac{1}{x} + \frac{1}{y} &= \frac{17}{2} - \frac{3}{2} = \frac{14}{2} = 7
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 58. \quad A - B &= 597 \\
 A &= 23B + 3 \\
 A - 23B &= 3 \\
 A - B &= 597 \\
 -/ \quad A - 23B &= 3 \\
 \hline
 A - B &= 597 \\
 + \quad -A + 23B &= -3 \\
 \hline
 22B &= 594 \\
 B &= 27 \text{ bulunur.}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 59. \quad \left(x - \frac{1}{x}\right)^2 &= (5)^2 \Rightarrow x^2 + \frac{1}{x^2} - 2 = 25 \\
 & & x^2 + \frac{1}{x^2} &= 27 \\
 5x^2 + \frac{5}{x^2} &= 5\left(x^2 + \frac{1}{x^2}\right) = 5 \cdot 27 \\
 & & &= 135 \text{ bulunur.}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 60. \quad 2x^2 - 7x + 2 &= 0 \\
 2x^2 - 7x &= -2 \\
 x(2x - 7) &= -2 \\
 2x - 7 &= \frac{-2}{x} \\
 \left(2x + \frac{2}{x}\right)^2 &= (7)^2 \\
 4x^2 + 2 \cdot 2x \cdot \frac{2}{x} + \frac{4}{x^2} &= 49 \\
 4x^2 + \frac{4}{x^2} + 8 &= 49 \\
 4x^2 + \frac{4}{x^2} &= 41 \text{ bulunur.}
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 61. \quad & \frac{(a-b)^2 + ab}{4(a^3 + b^3)} \\
 &= \frac{a^2 - 2ab + b^2 + ab}{4((a+b)(a^2 - ab + b^2))} \\
 &= \frac{a^2 - \cancel{ab} + b^2}{4((a+b)(a^2 - \cancel{ab} + b^2))} \\
 &= \frac{1}{4 \cdot \frac{1}{16}} = 4 \text{ bulunur.}
 \end{aligned}$$

Cevap: D

TASARI EĞİTİM YAYINLARI

$$\begin{aligned}
 62. \quad & \frac{(x^2-1)^2}{1-x-x^2+x^3} \\
 &= \frac{(x-1)^2 \cdot (x+1)^2}{(1-x)-x^2(1-x)} \\
 &= \frac{(x-1)^2 \cdot (x+1)^2}{(1-x) \cdot (1-x^2)} = \frac{\cancel{(x-1)^2} \cdot (x+1)^2}{(1-x) \cdot (1-x) \cdot (1+x)} \\
 &= x+1
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 63. \quad & \left(\frac{4x^a}{x^{b+1}}\right)^2 \cdot \left(\frac{x^b}{2x^{a-1}}\right)^2 \\
 &= \frac{16x^{2a}}{x^{2b} \cdot x^2} \cdot \frac{x^{2b}}{4x^{2a} \cdot x^{-2}} \\
 &= 4 \text{ bulunur.}
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 64. \quad & (301)_4 = (122)_4 + (1ab)_4 \\
 & \begin{array}{r} (301)_4 \\ - (122)_4 \\ \hline (113)_4 \end{array} \\
 & (113)_4 = (1ab)_4 \\
 & a=1 \quad b=3 \\
 & a-1 = 1-3 = -2 \text{ bulunur.}
 \end{aligned}$$

Cevap: A

$$\begin{aligned}
 65. \quad & A = \{x \mid |x-2| \leq 4, x \in \mathbb{R}\} \\
 & \rightarrow |x-2| \leq 4 \\
 & \rightarrow -4 \leq x-2 \leq 4 \\
 & \rightarrow \boxed{-2 \leq x \leq 6}
 \end{aligned}$$

$$\begin{aligned}
 B = \{x \mid |x+2| < 4, x \in \mathbb{R}\} \\
 \rightarrow |x+2| < 4 \\
 \rightarrow -4 < x+2 < 4 \\
 \rightarrow \boxed{-6 < x < 2}
 \end{aligned}$$

O halde $A \cap B = [-2, 2)$

Cevap: D

$$\begin{aligned}
 66. \quad & 2x + 6 < 3y \dots\dots\dots I \\
 & 12 - x > 2y \dots\dots\dots II
 \end{aligned}$$

I eşitsizliği 2 ile ve II eşitsizliği -3 ile çarpalım

$$\begin{array}{r} 4x + 12 < 6y \\ + \quad -36 + 3x < -6y \\ \hline 7x - 24 < 0 \end{array}$$

$$\begin{array}{l} 7x < 24 \\ \downarrow \\ 3 \\ 2 \\ \vdots \end{array} \left. \vphantom{\begin{array}{l} 7x < 24 \\ \downarrow \\ 3 \\ 2 \\ \vdots \end{array}} \right\} \text{MAX}(x) = 3 \text{ bulunur.}$$

Cevap: C

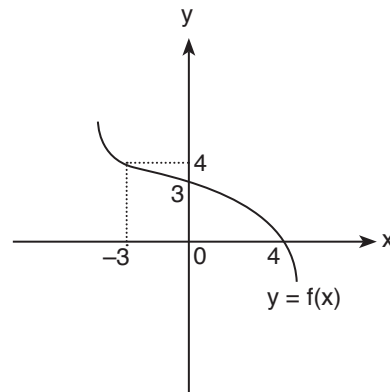
$$67. \quad \left. \begin{array}{l} a+b=2 \\ a+c=3 \end{array} \right\} \text{ için}$$

$$\begin{aligned}
 \Rightarrow a^2 + ab + 2c &= ? \\
 \Rightarrow a \cdot (a+b) + 2c &= ? \\
 \Rightarrow a \cdot 2 + 2c &= ? \\
 \Rightarrow 2 \cdot (a+c) &\Rightarrow 2 \cdot 3 = ?
 \end{aligned}$$

$$\boxed{6 = ?}$$

Cevap: E

68.



$$\begin{aligned}
 f(-3) &= 4 \\
 f(4) &= 0 \\
 f(0) &= 3
 \end{aligned}$$

$$\begin{aligned}
 \Rightarrow (f \circ f \circ f)(-3) \\
 \Rightarrow f[f(f(-3))] &= f[f(4)] \\
 &= f(0) = 3 \text{ bulunur.}
 \end{aligned}$$

Cevap: D

69. $\sqrt{x^2 + 1} \leq \sqrt{x + 1}$ her iki tarafın karesini alalım.

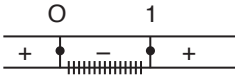
$$\Rightarrow x^4 + 2x^2 + 1 \leq x^2 + 2x + 1$$

$$\Rightarrow x^4 + x^2 - 2x \leq 0 \Rightarrow x \cdot (x^3 + x - 2) \leq 0$$

$x = 0$ ve $x^3 + x - 2 = 0$

$x = 1$

denklemin kökleridir.



$SS = [0, 1]$

Cevap: C

70. $a \in \mathbb{N}$ için

$$\begin{array}{r} 5x^2 + 14x - 1 \\ - \\ \hline 2 \end{array} \left| \begin{array}{l} x + a \\ \dots \end{array} \right. \left. \begin{array}{l} x = -a \text{ için;} \\ 5a^2 - 14a - 1 = 2 \\ 5a^2 - 14a - 3 = 0 \\ 5a \quad +1 \\ a \quad -3 \end{array} \right\}$$

$\Rightarrow (5a + 1) \cdot (a - 3) = 0$

$a = -\frac{1}{5} \notin \mathbb{N}$ ve $a = 3 \in \mathbb{N}$

Cevap: D

71. $\frac{Q(x)}{x-2} = \frac{\quad}{8}$

$x = 2$ için
 $Q(2) = 8$

$\frac{P(x)}{x-5} = \frac{\quad}{?}$

$x = 5$ için
 $P(5) = ?$

$\Rightarrow \frac{P(2x+1)}{Q(x)} = x^2 + x + 1$ polinomunda $x = 2$ için;

$\frac{P(5)}{Q(2)} = 2^2 + 2 + 1 \rightarrow \frac{P(5)}{Q(2)} = 7$

$\frac{P(5)}{8} = 7 \Rightarrow P(5) = 56$

Cevap: E

72. $f(x) = x + \frac{3}{4} - 4$ ve $f(x_1) = f(x_2) = 0$

$\Rightarrow f(x) = \frac{x^2 + 3 - 4x}{x} = 0$

$f(x) = x^2 - 4x + 3 = 0$

kökler toplamı $\Rightarrow x_1 + x_2 = -\frac{b}{a}$

$x_1 + x_2 = -\frac{(-4)}{1} = 4$ olur..

Cevap: E

73. $m > 0$ için $m - \frac{20}{m} = 1$

$\Rightarrow \frac{m^2 - 20}{m} = 1$

$\Rightarrow m^2 - 20 = m \rightarrow m^2 - m - 20 = 0$

$m \quad -5$
 $m \quad +4$

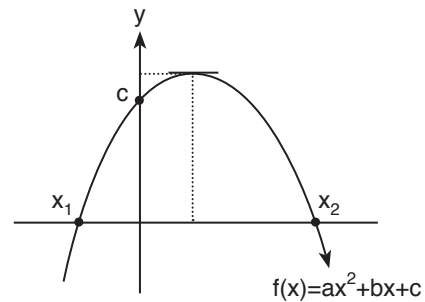
$\Rightarrow (m - 5) \cdot (m + 4) = 0$ ise;

$m = 5$ ve $m = -4$ olur $m > 0$ ise

$m = 5$ alınır.

Cevap: D

74.



$x = 0$ için

$f(x) = y = c \Rightarrow$ Pozitif

$x_1 \cdot x_2 = \text{negatif}$	$r > 0$
$\frac{c}{a} < 0$	$x_1 + x_2 > 0$
$c \Rightarrow +$	$-\frac{b}{a} > 0$
$a \Rightarrow -$	$b = +$

Cevap: C

TASARI EĞİTİM YAYINLARI

$$75. a_n = \begin{cases} 3n-1, & n \equiv 0 \pmod{3} \\ 2, & n \equiv 1 \pmod{3} \\ 2n, & n \equiv 2 \pmod{3} \end{cases}$$

$\Rightarrow n = 6$ için $6 \equiv 0 \pmod{3}$ olur.

o halde; $3 \cdot 6 - 1 = 17 = a_6$

$\Rightarrow n = 8$ için $8 \equiv 2 \pmod{3}$ olur.

o halde; $2 \cdot 8 = 16 = a_8$

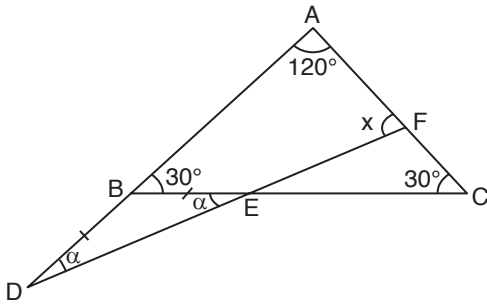
$\Rightarrow n = 28$ için $28 \equiv 1 \pmod{3}$

$a_{28} = 2$

$$\left. \begin{aligned} a_6 + a_8 + a_{28} &= ? \\ &= 17 + 16 + 2 \\ &= 35 \text{ bulunur.} \end{aligned} \right\}$$

Cevap: C

76.



$m(\widehat{BAC}) = 120^\circ$ ve $|AB| = |AC|$ ise

$m(\widehat{ABC}) = m(\widehat{ACB}) = 30^\circ$ dir.

$|DB| = |BE|$ olduğundan

$m(\widehat{D}) = m(\widehat{E}) = \alpha$ olsun

$2\alpha = 30^\circ \Rightarrow \alpha = 15^\circ$ olur.

ADF üçgeninde iç açılarının toplamı

$$120^\circ + \alpha + x = 180^\circ$$

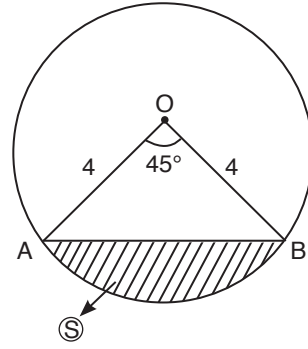
$$120 + 15 + x = 180$$

$$x = 180 - 135$$

$$x = 45^\circ \text{ bulunur.}$$

Cevap: D

77.



Merkezi 45° olan daire diliminin alanını bulalım.

$$\frac{45}{360} \cdot \pi \cdot 4^2 = \frac{45}{360} \pi \cdot 16 = 2\pi \text{ olur.}$$

Sonra $A(\widehat{AOB})$ yi bulalım

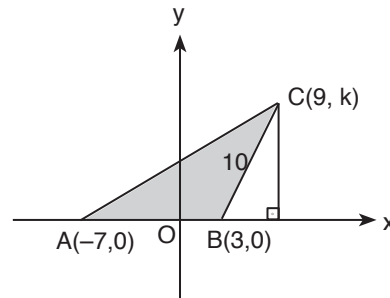
$$\frac{1}{2} \cdot 4 \cdot 4 \cdot \sin 45 = \frac{1}{2} \cdot 4 \cdot 4 \cdot \frac{\sqrt{2}}{2} = 4\sqrt{2}$$

O halde $S = 2\pi - 4\sqrt{2}$ olur.

Cevap: B

TASARI EĞİTİM YAYINLARI

78.



$|AB| = 10 = |BC|$ olur.

C'den x eksenine yükseklik indirelim.

$|OH| = 9$ olup $|BH| = 6$ olur.

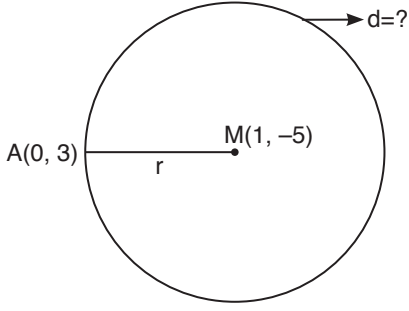
6 - 8 - 10 üçgeninden $|CH| = 8$ olur.

$$\text{O halde } A(ABC) = \frac{|CH| \cdot |AB|}{2}$$

$$= \frac{8 \cdot 10}{2} = 40 \text{ olur.}$$

Cevap: C

79.



M merkezi $m(x_0, y_0)$ ve yarıçapı r olan daire denklemini

$$(x - x_0)^2 + (y - y_0)^2 = r^2 \text{ olur.}$$

$$r = \sqrt{(0 - 1)^2 + (3 - (-5))^2} = \sqrt{1 + 64} = \sqrt{65} \text{ olur.}$$

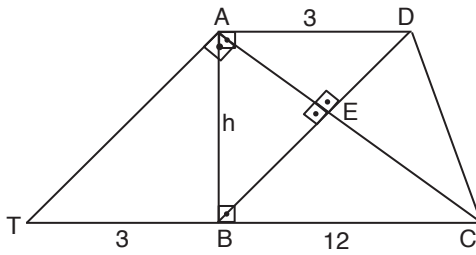
$$(x - 1)^2 + (y + 5)^2 = (\sqrt{65})^2$$

$$x^2 - 2x + 1 + y^2 + 10y + 25 = 65$$

$$x^2 + y^2 - 2x + 10y - 39 = 0$$

Cevap: D

80.



AT ve TB çizilirse $m(\widehat{TAC}) = 90^\circ$ olur.

O halde TAC üçgeninde öklid yapalım

$$h^2 = 3 \cdot 12 \Rightarrow h = \sqrt{36} = 6 \text{ olur.}$$

$$\text{Yamuğun alanı } \frac{(3 + 12) \cdot h}{2} = \frac{15 \cdot 6}{2}$$

$$= 45 \text{ olur.}$$

Cevap: B