

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 → 1534

ZATF → 8137

ZRKF → 8547

ARFT → 1573

ATKK → 1344

ZRKF → 8547

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.

$\epsilon \beta \alpha \gamma \rightarrow 5976$

$\gamma \beta \epsilon \alpha \rightarrow 6957$

$\emptyset \alpha \epsilon \alpha \rightarrow 8757$

$\emptyset \gamma \oplus \gamma \rightarrow 8616$

$\emptyset \epsilon \oplus \beta \rightarrow 8519$

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

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. (Siyah dairelerin içini çarp) – (Beyaz Daire içlerini topla)

$$(4.7) - (2 + 3) = 28 - 5 = 23$$

$$(5.8) - (3 + 6) = 40 - 9 = 31$$

$$(9.6) - (8 + 4) = 54 - 12 = 42$$

$$(7.5) - (9 + 1) = 35 - 10 = 25$$

$$x = (6.7) - (4 + 8) = 42 - 12 = 30$$

Cevap: E

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

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

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

$$\begin{array}{r} 212 \\ \times 32 \\ \hline 424 \\ + 636 \\ \hline 6784 \end{array}$$

bulunur.

Cevap: E

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

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

$$\bullet 2c = b \Rightarrow 2c = 4 \Rightarrow c = 2$$

$$\bullet c + a = 2b \Rightarrow 2 + a = 8 \Rightarrow a = 6$$

$$\bullet b + d = a + 1 \Rightarrow 4 + d = 6 + 1 \Rightarrow d = 3$$

$$\bullet d + e = a + c \Rightarrow 3 + e = 6 + 2 \Rightarrow e = 5$$

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 |

$$a + b + c = ?$$

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

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

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

$k = 2$ 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

$a \cdot a = c + 29$,

$a^2 = c + 29$

$b \cdot b = c - 15$

$b^2 = c - 15$

II. tablodan

$(a + b) = (11)$

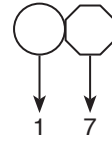
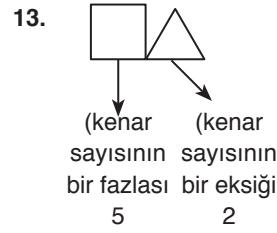
$a^2 - b^2 = c + 29 - c + 15$

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

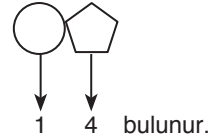
11

$a - b = 4$ bulunur.

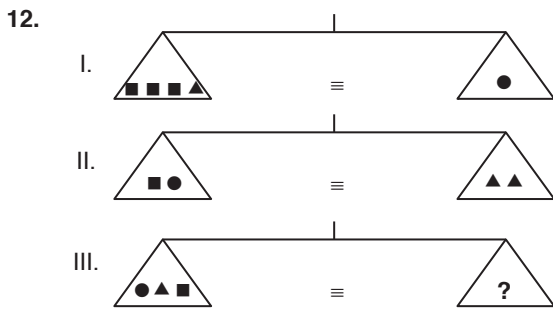
Cevap: D



O halde



CEVAP: A



■ = x, ▲ = y, ● = z

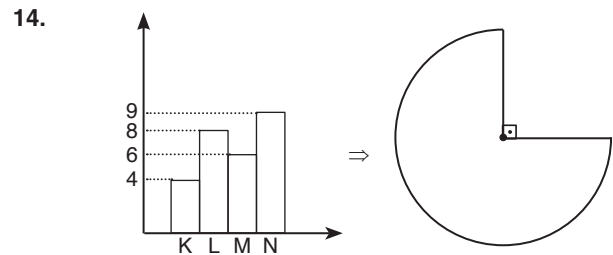
I. $3x + y = z$

II. $x + z = 2y$

III. $x + y + z = ?$

$3y = \blacktriangle\blacktriangle\blacktriangle$ olabilir.

Cevap: D



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

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

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

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

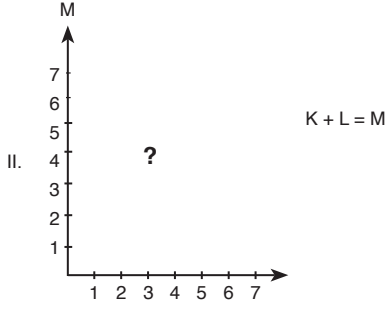
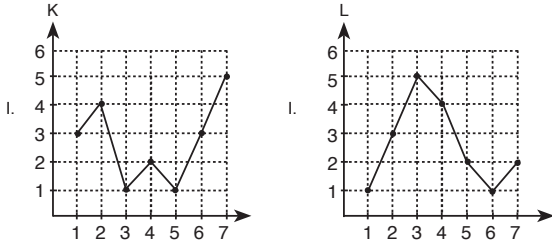
$27a = 270^\circ$

$a = 10^\circ$

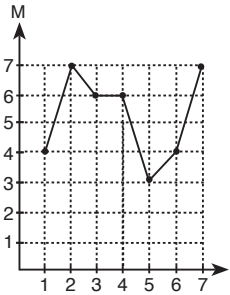
$K = 40^\circ$, $L = 80^\circ$, $M = 60^\circ$ ve $N = 90^\circ$ olur.

Cevap: E

15.

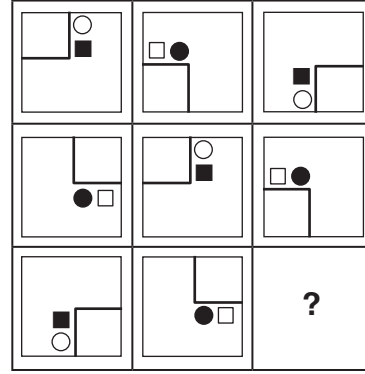


| | K | + | L | = | M |
|----|---|---|---|---|---|
| 1. | 3 | | 1 | = | 4 |
| 2. | 4 | | 3 | = | 7 |
| 3. | 1 | | 5 | = | 6 |
| 4. | 2 | | 4 | = | 6 |
| 5. | 1 | | 2 | = | 3 |
| 6. | 3 | | 1 | = | 4 |
| 7. | 5 | | 2 | = | 7 |

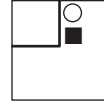


Cevap: E

16.



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



Cevap: C

TASARI EĞİTİM YAYINLARI

17. ABCD karesi 4 birim kareden oluşur.

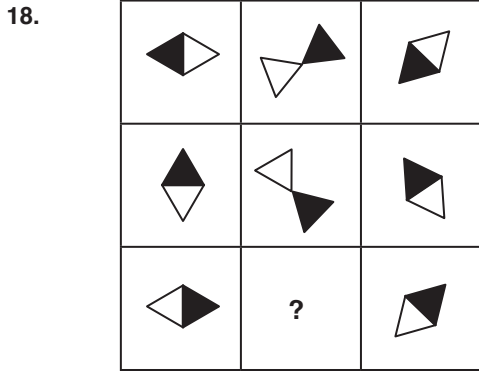
Alan(ABCD) = 20 ise

4.(birim kare) = 20

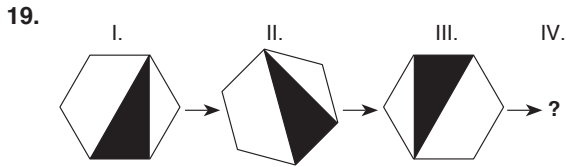
Bir tane birim karenin alanı 5 br^2 bulunur.

Taralı kareler sayılırsa 105 bulunur.

Cevap: B



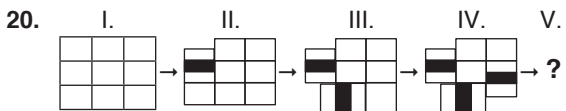
Cevap: A



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



Cevap: B

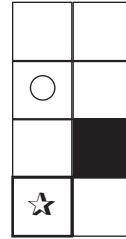
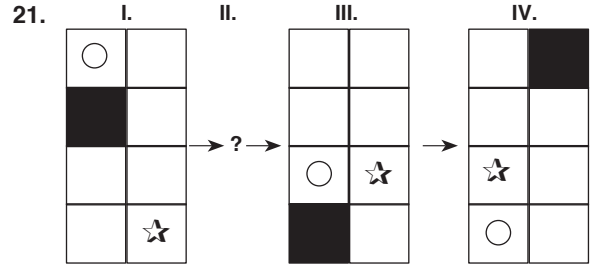


Her şekilde siyahlık iki kenar ilerlemekte ve siyahlaştırmakta

O halde seçeneğimiz A olur.

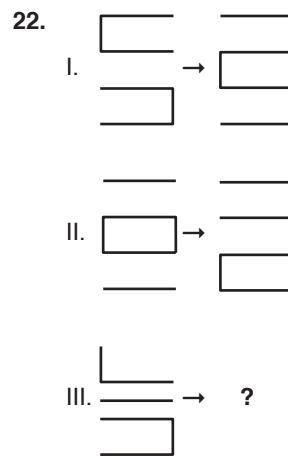


Cevap: A



Cevap: B

TASARI EĞİTİM YAYINLARI

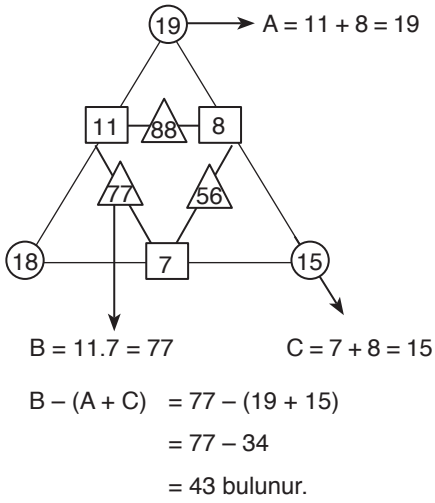


Yukarıdaki kenar çizgi bir adım aşağıya
 aşağıdaki kenar çizgi bir adım yukarı hareket etmekte.



Cevap: B

23.



CEVAP: B

25. 2:27 3:09 3:51 4:33 X

I. saat 2:27

II. saat 3:09

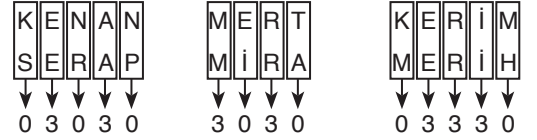
Fark $3:09 - 2:27 = 42$ dk eklenmekte

O halde x

$$4:33 + 0:42 = 5:15 \text{ bulunur.}$$

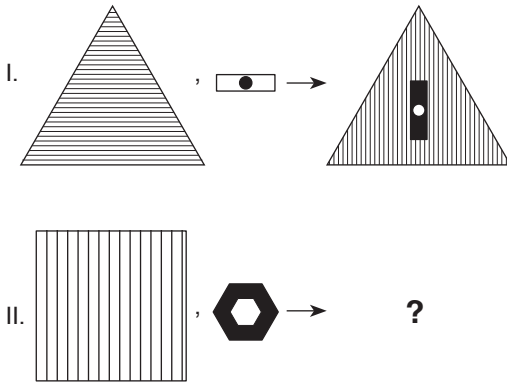
Cevap: D

26.

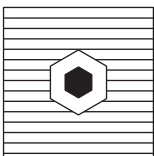


Cevap: B

24.

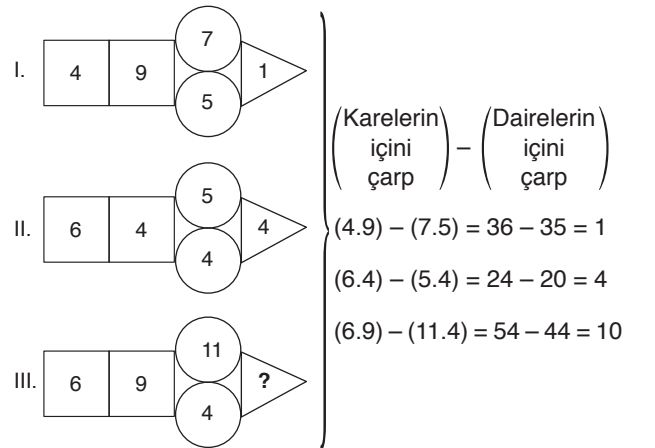


Sağdaki soldaki şeklin içine dik şekilde yerleştirilmekte beyazlar siyah siyahlar beyaz olmakta Şeklimiz D seçeneği olur.



Cevap: D

27.



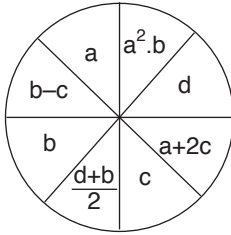
Cevap: C

28 - 29. soruları aşağıdaki şekle göre cevaplayınız.

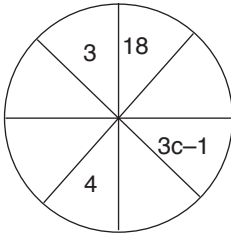
Answers questions 27 - 28 accordance with the figure given below.

Her soru birbirinden bağımsız olarak cevaplanacaktır.

Each question is to be answered independently.



28.



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

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

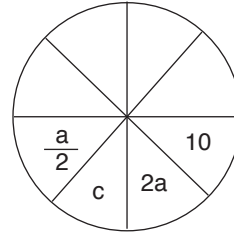
$$b = 2 \quad d + 2 = 8 \quad c = 4$$

$$d = 6$$

$$\frac{a.c}{d.b} = \frac{3.4}{6.2} = \frac{12}{12} = 1$$

Cevap: A

29.



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

$$\downarrow \quad \downarrow$$

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

$$d + 1 = 8$$

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

$$\underline{c = 4}$$

$$a + 2a = 10$$

$$a + 4a = 10$$

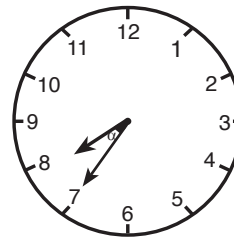
$$5a = 10$$

$$\underline{a = 2}$$

Cevap: E

TASARI EĞİTİM YAYINLARI

30.



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

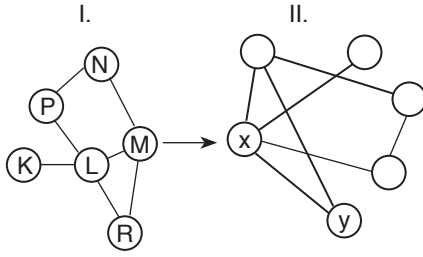
$$\alpha = \left| \frac{11.34 - 60.7}{2} \right|$$

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

$$\alpha = 23^\circ$$

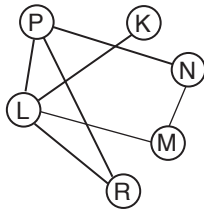
Cevap: A

31.



x = ? y = ?

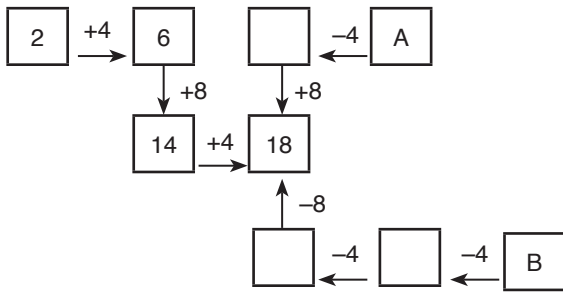
İkinci şekil



x → L
y → R

Cevap: A

32.



+4 →
-4 ←

↓ +8 ↑ -8 şeklinde

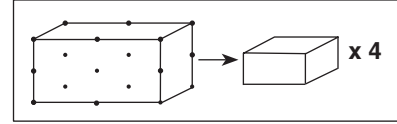
A = 14 ve B = 34
A + B = 14 + 34
= 48 bulunur.

Cevap: B

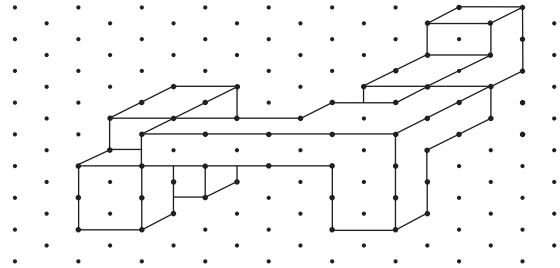
33. soruyu örnekte verilen ilişkiye göre cevaplayınız.

In question 39, find the correct answer in accordance with the relationship established in the example below

ÖRNEK
EXAMPLE



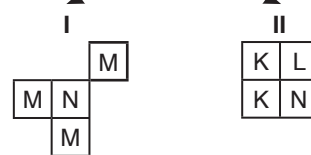
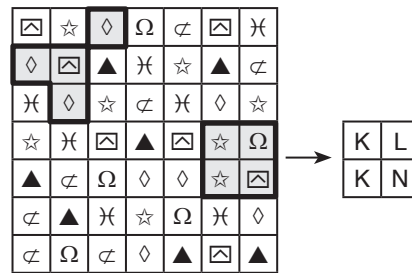
33.



Şekildeki noktaları birleştirdiğimizde şeklimizde 19 küp oluşmakta

Cevap: C

34.



M = ◇ K = ☆
N = ◻ L = Ω

Cevap: A

TASARI EĞİTİM YAYINLARI

35.

| | | | | | | |
|---|---|---|---|---|---|---|
| ∅ | ⬡ | ⊞ | ⌘ | ⌘ | ⊞ | ⬡ |
| ⊞ | ∈ | ⌘ | ∅ | ∈ | ⬡ | ⌘ |
| ⬡ | ∅ | ⬡ | ⬡ | ⊞ | ⬡ | ⌘ |
| ∈ | ⊞ | ∅ | ∈ | ⬡ | ∅ | ⌘ |
| ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ |
| ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ |

| | |
|---|---|
| M | L |
| N | M |

←

I

| | | | |
|---|---|---|---|
| K | K | L | K |
|---|---|---|---|

K = ⬡
L = ⌘

II

| | |
|---|---|
| M | L |
| N | M |

M = ⌘
N = ∅

Cevap: E

36.

Sol taraf

Cevap: D

37.

Şekiller birleştirildiğinde sağdaki şekilde A seçeneği eksik.

Cevap: A

38.

I.

II.

Cevap: A

39.

K = C L = D

Cevap: D

40.

| | | | |
|---------|---|-------------------------------|--|
| 1. adım | → | $3^1 = 3$ | |
| 2. adım | → | $3^2 = 9$ | |
| 3. adım | → | $3^3 = 27$ | |
| 4. adım | → | $3^4 = 81$ | |
| 5. adım | → | $3^5 = 243$ tane taralı üçgen | |

Cevap: E

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

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

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

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

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

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

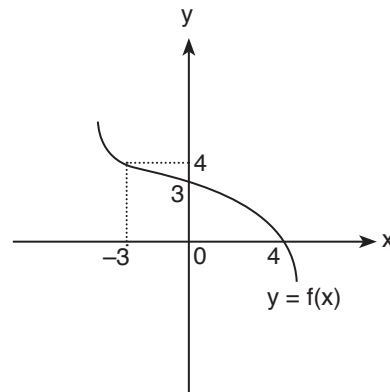
$$67. \quad \left. \begin{array}{l} a+b=2 \\ a+c=3 \end{array} \right\} \text{ için}$$

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

$$\boxed{6 = ?}$$

Cevap: E

68.



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

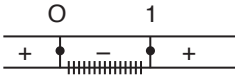
$$\begin{aligned}
 \Rightarrow (f \circ f \circ f)(-3) \\
 \Rightarrow f[f(f(-3))] &= f[f(4)] \\
 &= f(0) = 3 \text{ bulunur.}
 \end{aligned}$$

Cevap: D

69. $\left(\left| x^2 + 1 \right| \right)^2 \leq \left(\left| x + 1 \right| \right)^2$ her iki tarafın karesini alalım.

$$\begin{aligned} \Rightarrow x^4 + 2x^2 + 1 &\leq x^2 + 2x + 1 \\ \Rightarrow x^4 + x^2 - 2x &\leq 0 \Rightarrow x \cdot (x^3 + x - 2) \leq 0 \\ \boxed{x=0} \text{ ve } x^3 + x - 2 &= 0 \\ \boxed{x=1} \end{aligned}$$

denklemin kökleridir.



$SS = [0, 1]$

Cevap: C

70. $a \in \mathbb{N}$ için

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

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

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

Cevap: D

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

$x = 2$ için
 $\boxed{Q(2) = 8}$

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

$x = 5$ için
 $\boxed{P(5) = ?}$

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

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

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

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 $m - \frac{20}{m} = 1$ için;

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

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

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

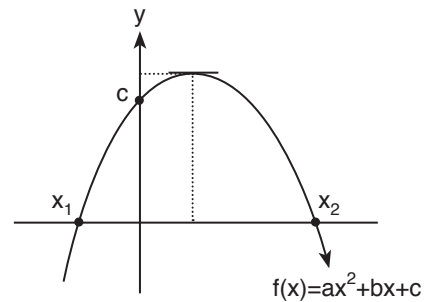
$\Rightarrow (m - 5) \cdot (m + 4) = 0$ ise;

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

$\boxed{m = 5}$ alınır.

Cevap: D

74.



$x = 0$ için

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

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

Cevap: C

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

$\Rightarrow n = 6$ 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; $2 \cdot 8 = 16 = a_8$

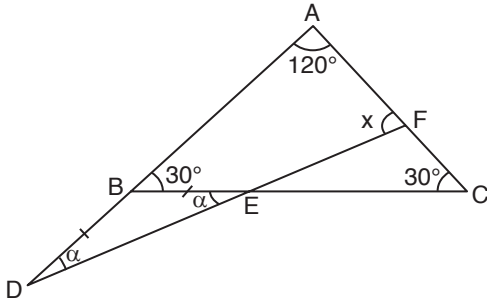
$\Rightarrow n = 28$ için $28 \equiv 1 \pmod{3}$

$a_{28} = 2$

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

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

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

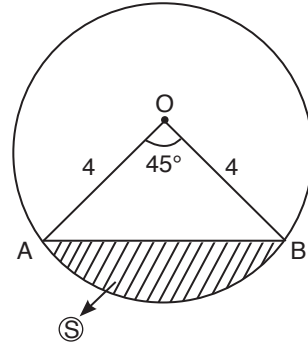
$$120 + 15 + x = 180$$

$$x = 180 - 135$$

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

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

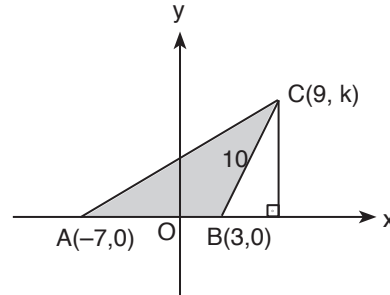
$$\frac{1}{2} \cdot 4 \cdot 4 \cdot \sin 45 = \frac{1}{2} \cdot 4 \cdot 4 \cdot \frac{\sqrt{2}}{2} = 4\sqrt{2}$$

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.

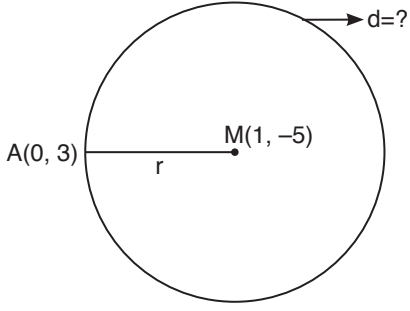
6 - 8 - 10 üçgeninden $|CH| = 8$ olur.

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

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

Cevap: C

79.



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

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

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

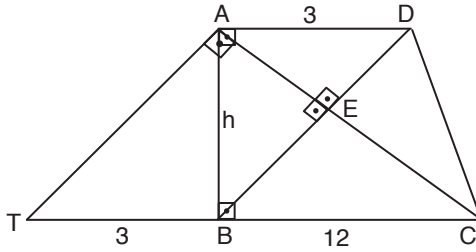
$$(x - 1)^2 + (y + 5)^2 = (\sqrt{65})^2$$

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

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

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