




Bu testte cevaplayacağınız toplam soru sayısı 80'dir.

1.  → (içindeki değer)<sup>kenar sayısı</sup>

 → (içindeki değer)<sup>kenar sayısı</sup>

 → (içindeki değer) x 8

O halde

$$\begin{aligned} \text{3} - \text{6} + \text{11} &= 3^5 - 6^3 + 11.8 \\ &= 243 - 216 + 88 \\ &= 115 \end{aligned}$$

Cevap: D

2.  $a_1 + a_2 = \frac{1+2}{1.2} = \frac{3}{2}$

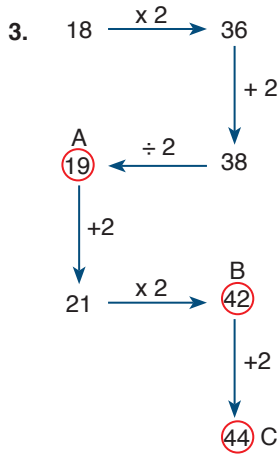
$$a_2 + a_3 = \frac{2+3}{2.3} = \frac{5}{6}$$

$$a_4 + a_5 = \frac{4+5}{4.5} = \frac{9}{20}$$

O halde

$$\begin{aligned} a_{10} + a_{20} &= \frac{10+20}{10.20} = \frac{30}{200} \\ &= \frac{3}{20} \end{aligned}$$

Cevap: D



$$A + B + C = 19 + 42 + 44 = 105 \text{ bulunur.}$$

Cevap: A

4. (Üst kutuların toplamı). (Alt kutunun iki katı)

I. şekil

$$(14 + 8).(3.2) = 22.6 = 132$$

II. şekil

$$(15 + 9).(4.2) = 24.8 = 192$$

III. şekil

$$(16 + 10).(5.2) = 26.10 = 260$$

IV. şekil

$$(17 + 11).(6.2) = 28.12 = 336$$

Cevap: A

5.

$$\begin{array}{r} 264 \\ \times 135 \\ \hline 1320 \\ 792 \\ + 264 \\ \hline 35640 \end{array}$$

$\triangle \bullet \square * \blacklozenge$

2 1 1 7 2 bulunur.

Cevap: B

6.  $\triangle \rightarrow$  Bölme,  $\bullet \rightarrow$  çarpma,  $* \rightarrow$  çıkarma

$$\boxed{22} \triangle \boxed{2} * \boxed{5} \bullet \boxed{6}, \boxed{8} \bullet \boxed{4} \triangle \boxed{2} * \boxed{10}$$

$$22 \div 2 = 11$$

$$8 \times 4 = 32$$

$$11 - 5 = 6$$

$$32 \div 2 = 16$$

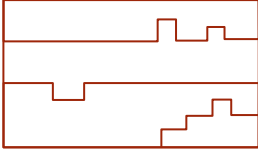
$$6 \times 6 = 36 = A$$

$$16 - 10 = 6 = B$$

$$A - B = 36 - 6 = 30 \text{ bulunur.}$$

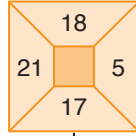
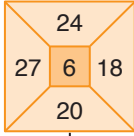
Cevap: C

7. Şekiller üst üste getirildiğinde



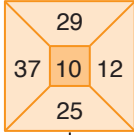
Cevap: C

8.

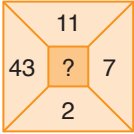


$$\sqrt{(27-18) \cdot (24-20)} = \sqrt{9 \cdot 4} = 6$$

$$\sqrt{(21-5) \cdot (18-17)} = \sqrt{16 \cdot 1} = 4$$



$$= \sqrt{(37-12)(29-25)} = \sqrt{25 \cdot 4} = 10$$



$$= \sqrt{36 \cdot 9}$$

$$= 6 \cdot 3$$

$$= 18 \text{ bulunur.}$$

Cevap: B

9.  $\rightarrow x$     $\rightarrow y$     $\rightarrow z$

I.  $x = 2y$ ,

II.  $3y = z$

III.  $3x = ?$

$$3 \cdot 2y = 6y = 2 \cdot (3y) = 2z$$

Cevap: D

10. Dizimiz her ilerleyişinde 7 eksilmekte.

O halde şu kalıbı kullanabiliriz.

$12 - 7 \cdot (\text{adım sayısı})$

$$1 \rightarrow 12 - 7 \cdot 1 = 5$$

$$2 \rightarrow 12 - 7 \cdot 2 = -2$$

$$3 \rightarrow 12 - 7 \cdot 3 = -9$$

$$4 \rightarrow 12 - 7 \cdot 4 = -16$$

$\vdots$

$$20 \rightarrow 12 - 7 \cdot 20 = -128 = a$$

$$21 \rightarrow 12 - 7 \cdot 21 = -135 = b$$

$\vdots$

$$50 \rightarrow 12 - 7 \cdot 50 = -338 = c$$

$$51 \rightarrow 12 - 7 \cdot 51 = -345 = d$$

$$a - d = -128 - (-345)$$

$$= -128 + 345$$

$$= 217$$

Cevap: D

11. Toplam tablosundan

$$a + c = 3b + 1$$

Çarpım tablosundan

$$a \cdot b = 56 \text{ ve } b \cdot c = 98$$

(Taraf tarafa toplayalım.)

$$b(a + c) = 154$$

$$b(3b+1) = 154 \Rightarrow b = 7$$

$$\downarrow$$

$$a \cdot 7 = 56$$

$$7 \cdot c = 98$$

$$a = 8$$

$$c = 14$$

$$a \cdot c = 8 \cdot 14 = 112 \text{ bulunur.}$$

Cevap: E

12. 1. tabloda toplamın iki katı.

$$2.(5 + 4) = 18$$

$$2(5 + 7) = 24$$

$$2.(8 + 4) = 24$$

$$2.(8 + 7) = 30 = A$$

2. tabloda toplamların yarısı

$$\frac{13 + 15}{2} = 14,$$

$$\frac{13 + 7}{2} = 10$$

$$\frac{9 + 15}{2} = 12 = B$$

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

O halde  $A - B = 30 - 12 = 18$  bulunur.

Cevap: C

13. III.  $(4, x) \rightarrow 4^{x-1} = 64$

$$4^{x-1} = 4^3$$

$$x - 1 = 3 \Rightarrow x = 4$$

$$K = 4.4 + 5.4 = 16 + 20 = 36$$

IV.  $y^{z-1} = 32 = 2^5$

$$y = 2 \text{ ve } z - 1 = 5$$

$$z = 6$$

$$V.n^{5-1} = 1$$

$$n^4 = 1 \Rightarrow n = 1 \text{ olur.}$$

O halde

$$K + x + y + z + n = 36 + 4 + 2 + 6 + 1 = 49 \text{ bulunur.}$$

Cevap: E

14.

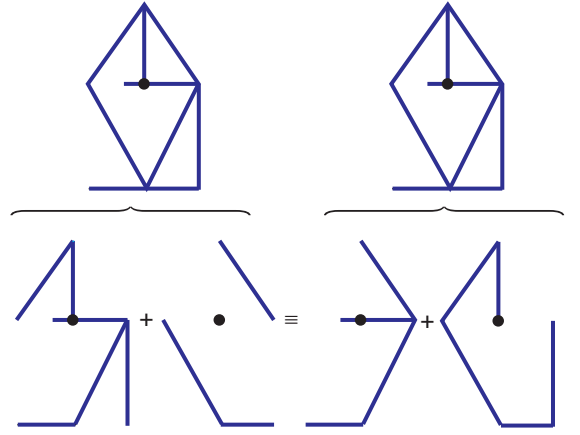
	(9,2)	(7,5)	(4,1)	(6,8)	(3,10)	
(9,3)	9				3	→ 27
(2,6)	2			6		→ 12
(4,10)			4		10	→ 40
(7,8)		7		8		→ 56
(5,1)		5	1			→ 5
	↓	↓	↓	↓	↓	
	18	35	4	48	30	

$K = 5$ ,  $L = 4$  ve  $M = 6$

$K + L + M = 5 + 4 + 6 = 15$  bulunur.

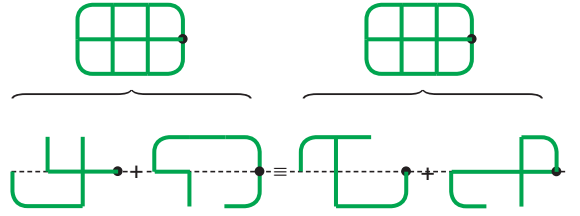
Cevap: B

15.



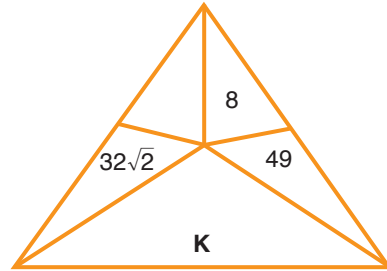
Cevap: B

16.



Cevap: D

17.



$$\bullet a^2 = 8$$

$$a = 2\sqrt{2}$$

$$\bullet a.c^2 = 32\sqrt{2}$$

$$2\sqrt{2}.c^2 = 32\sqrt{2}$$

$$c^2 = 16$$

$$c = 4$$

$$\bullet (c + b)^2 = 49$$

$$(4 + b)^2 = 49$$

$$4 + b = 7 \Rightarrow b = 3$$

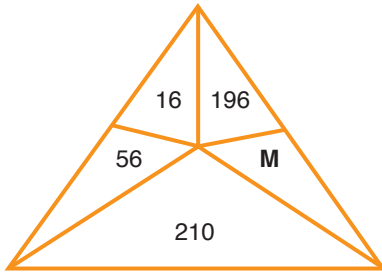
$$\Rightarrow K = a^2 + 3c + 2b$$

$$= 8 + 3.4 + 2.3 = 26$$

Cevap: C

Diğer Sayfaya Geçiniz.

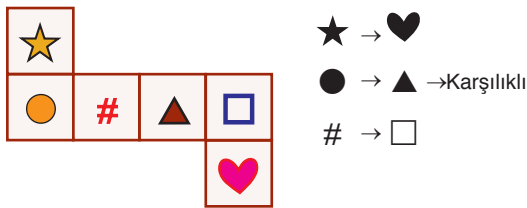
18.



- $a^2 = 196$   
 $a = 14$
- $a + 2d = 16$   
 $14 + 2d = 16$   
 $2d = 2$   
 $d = 1$
- $a \cdot c^2 = 56$   
 $14 \cdot c^2 = 56$   
 $c^2 = 4$   
 $c = 2$
- $210 = 196 + 6 + 2b$   
 $b = 4$
- $M = (2 + 4)^2 = 36$

Cevap: E

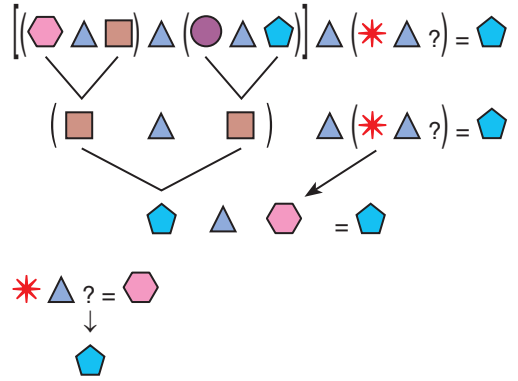
19.



- A) B) C)
- D) E)
- Karşılıklı olmalı

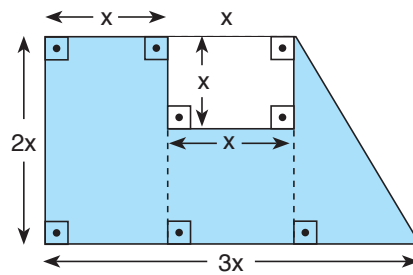
Cevap: D

20.



Cevap: D

21.



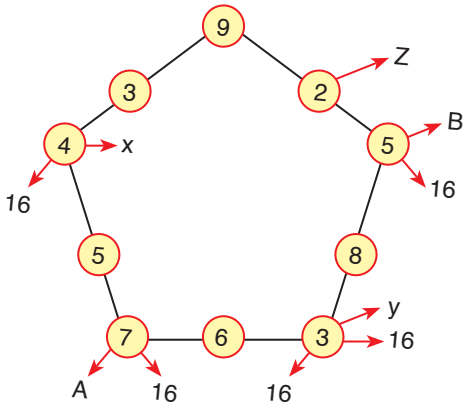
Yamuğun alanı =  $\frac{(3x + 2x)}{2} \cdot 2x = 5x^2$

Beyaz bölge alanı =  $x \cdot x = x^2$

Taralı alan =  $5x^2 - x^2 = 4x^2$

Cevap: D

22.



$$9 + 3x = x + 5 + A$$

$$A = 7$$

$$A + 6 + y = y + 8 + B$$

↓

7

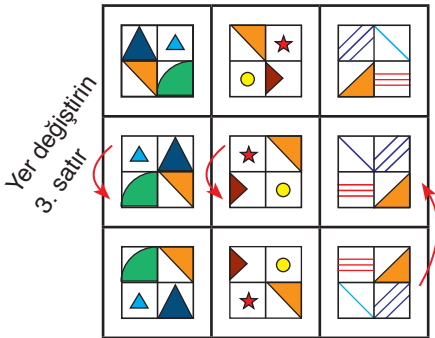
B = 5 olur.

A = 7 ve B = 5

A.B = 7.5 = 35 bulunur.

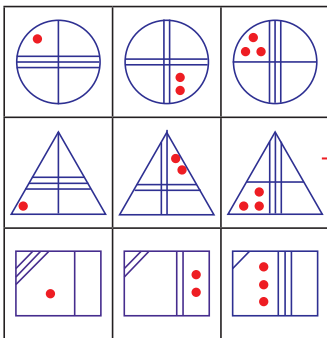
Cevap: A

23.



Cevap: C

24.



Nokta sayısı artarak ilerliyor.

Cevap: C

25.

•  $a = 2$  ve  $b^4 = 2$  için

•  $a^2 * b^4 = 2 + 2^2 = 6$

→  $6 \square 12 \Rightarrow 2a = 6$  ve  $3b = 12$

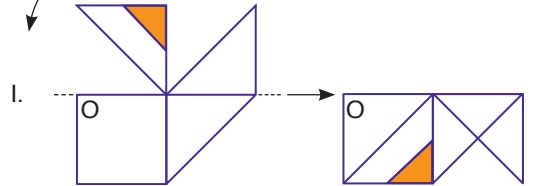
$a = 3$        $b = 4$

$2a \square 3b = 3.3 + 2.4 = 17$

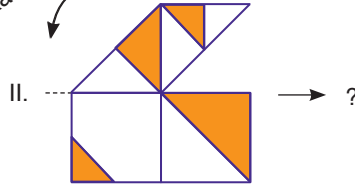
Cevap: B

26.

Üstüne katlanmış



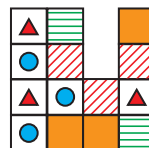
katla



Cevap: D

27.

İki şekildeki ortak olanlar silinip kalanlar toplanmakta. Bu durumda



Cevap: B

28. I. II. III. IV.

■ → Saat yönü 2 birim  
 ★ → Saat yönü 4 birim  
 ■ → Saat yönü tersi 2 birim  
 ▨ → Sabit  
 ● → Saat yönü tersi 3 birim

Cevap: B

29.  $1 \clubsuit 2 = 1^2 + 2^2 = 1 + 4 = 5$   
 $2 \clubsuit 1 = 2^2 + 1^2 = 4 + 1 = 5$   
 $\Rightarrow 5 \diamond 5 = 5^3 + 5^2 = 150$

Cevap: D

30. I. II.

T	A	V	A	} ⇒	2	1	4	1	} ⇒ T = 2	
T	A	N	E		2	1	3	6		
K	E	D	İ		5	6	8	7		} ⇒ E = 6
P	İ	D	E		9	7	8	6		
K	E	N	E		5	6	3	6		

⇒ T A N E = 2 -- 6 →

Cevap: B

31.

$x+1$		$x+3$			
a	1047	K	b	C	L
$x$		$x+2$		$x+4$	

$$x = a + 1047$$

$$x + 1 = a + K \Rightarrow a + 1047 + 1 = a + K$$

$$K = 1048$$

$$x + 2 = K + b$$

$$a + 1047 + 2 = 1048 + b \Rightarrow b = a + 1$$

$$x + 3 = b + L$$

$$a + 1047 + 3 = a + 1 + L \Rightarrow L = 1049$$

$$\text{Bu durumda } K + L = 1048 + 1049$$

$$= 2097 \text{ bulur.}$$

Cevap: B

Cevap: D

32. \* saat yönü  $\curvearrowright 90^\circ$

▲ ters düz şeklinde  $180^\circ$

\*\* ▲ ▲ \* → (M) → ≍ → W → M → W → ≍

Cevap: B

33. Örnekten boş kare kenarda 4 yıldızlı ise

$$1 + 1 + 3 = 5 \text{ olduğu görülür.}$$

En üst kare hariç diğer satırlarda 2'şer tane  kare bulunmakta dahası her terimde;

Yıldızlı kare sayısı 730 tepedeki hariç  $730 - 1 = 729$  tam

$$1 + 3 + 5 + 7 + \dots + x = 729$$

$$n^2 = 729$$

$$n^2 = 27^2 \Rightarrow n = 27$$

$$x = 2n - 1 = 2 \cdot 27 - 1 = 53 \text{ olur.}$$

$$\text{Terim sayısı } \frac{53+1}{2} = 27 \text{ tam}$$

Yani bu yapıda  $27 \times 2 = 54$  tane  bulunmakta

K = 54 bulunur.

Cevap: E

34.  $K = 5x$   
 $L = 4x$   
 $M = 3x \Rightarrow 5x + 4x + 3x + 2x + x = 360$   
 $N = 2x \quad 15x = 360^\circ$   
 $P = x \quad x = 24^\circ$   
 $(K + P) - (M + N) = (5x + x) - (3x + 2x) = x = 24^\circ$

Cevap: D

35. •  $a + c = 4c \Rightarrow a = 3c$   
 $a = 3 \cdot 3 = 9$   
 •  $a \cdot c = 27$   
 $3c \cdot c = 27 \Rightarrow c^2 = 9$   
 $c = 3$   
 •  $b + c = 13 \Rightarrow b + 3 = 13$   
 $b = 10$   
 $\Rightarrow \frac{c \cdot a}{b} = \frac{3 \cdot 9}{10} = \frac{27}{10}$

Cevap: C

36. Saat yönü çevirmelerde C seçeneği uygun değildir.

Cevap: C

37. Şekillere göre

$$3^y = 81 \Rightarrow 3^y = 3^4$$

$$y = 4$$

$$9^{\frac{y-x}{2}} = 3\sqrt{3}$$

$$\left(3^{\frac{2 \cdot (4-x)}{2}}\right)^2 = \sqrt{27}$$

$$3^{8-2x} = 27 = 3^3$$

$$8-2x = 3 \Rightarrow 2x = 5$$

$$x = \frac{5}{2}$$

$$K = y^x = 4^{\frac{5}{2}} = 2^2 \cdot \frac{5}{2} = 32 \text{ bulunur.}$$

Cevap: C

38. 

5	1
	2
1	14

$$5 + 1 + 1 + 4 = 11$$

2	1
	2
7	6

$$2 + 1 + 7 + 6 = 16$$

6	7
	2
8	4

$$6 + 7 + 8 + 4 = 25$$

5	9
	2
7	1

$$5 + 9 + 7 + 1 = 22$$

8	4
	2
3	4

$$8 + 4 + 3 + 4 = 19$$

olabilir.

Cevap: D

39. 

M	K	L
K	L	

 $\rightarrow$ 

♥	♠	♣
♠	♣	

  
 $\rightarrow K = \spadesuit$   $L = \clubsuit$   

L	K	N
	N	P

 $\rightarrow$ 

♣	♠	♂
	♂	♂

  
 $\Rightarrow P = \ell$   
 $N = \Sigma$

Cevap: A

40.  $73 \rightarrow 7^2 + 3^2 = 49 + 9 = 58$   
 $49 \rightarrow 4^2 + 9^2 = 16 + 81 = 97$   
 $86 \rightarrow 8^2 + 6^2 = 64 + 36 = 100$   
 $97 \rightarrow 9^2 + 7^2 = 81 + 49 = 130$   
 $56 \rightarrow 5^2 + 6^2 = 25 + 36 = 61$

Cevap: B

$$\begin{aligned}
41. \quad & \frac{5}{12} - \left( \frac{1}{3} - \frac{5}{6} \right) + \left( \frac{19}{12} - 2 \right) \\
&= \frac{5}{12} - \left( -\frac{3}{6} \right) + \left( -\frac{5}{12} \right) \\
&= \frac{5}{12} + \frac{3}{6} - \frac{5}{12} \\
&= \frac{1}{2}
\end{aligned}$$

Cevap: B

$$\begin{aligned}
42. \quad & \frac{6^5 - 2^5 - 3^5 + 1}{121} \\
&= \frac{2^5 \cdot 3^5 - 2^5 - 3^5 + 1}{121} \\
&= \frac{2^5(3^5 - 1) - (3^5 - 1)}{121} \\
&= \frac{(3^5 - 1) \cdot (2^5 - 1)}{121} = \frac{(243 - 1) \cdot (32 - 1)}{121} \\
&= \frac{242 \cdot 31}{121} \\
&= 62 \text{ bulunur.}
\end{aligned}$$

Cevap: D

$$\begin{aligned}
43. \quad & 7^3 \cdot 7^5 \cdot 7^7 \dots 7^{333} = 7^{3+5+7+\dots+333} = x \\
& 1 + 3 + 5 + 7 + \dots + 333 = x + 1 \\
& \underbrace{1 + 3 + 5 + 7 + \dots + 333}_{2n - 1 = 333} = x + 1 \\
& 2n = 334 \\
& n = 167 \Rightarrow n^2 = 167^2 \\
& x = 167^2 - 1 \Rightarrow 7^{167^2 - 1} \text{ bulunur.}
\end{aligned}$$

$$\begin{aligned}
& 7^2 \cdot 7^4 \cdot 7^6 \dots 7^{332} = 7^{2+4+6+\dots+332} \\
& 2n = 332 \\
& n = 166 \Rightarrow n(n + 1) = 166 \cdot 167 \\
& 7^{166 \cdot 167} \\
& \text{Bu durumda} \\
& \frac{7^{167^2 - 1}}{7^{166 \cdot 167}} = \frac{7^{(167 - 1)(167 + 1)}}{7^{166 \cdot 167}} = 7^{166 \cdot 168 - 166 \cdot 167} \\
& = 7^{166(168 - 167)} \\
& = 7^{166} \text{ bulunur.}
\end{aligned}$$

Cevap: C

$$\begin{aligned}
44. \quad & b \cdot c = 4 \\
x \quad & a \cdot c = -16 \\
\hline
& \underbrace{a \cdot b \cdot c^2}_{-36} = -64
\end{aligned}$$

$$c^2 = \frac{64}{36} \Rightarrow c = \sqrt{\frac{64}{36}} = \frac{8}{6} = \frac{4}{3}$$

$$b \cdot \frac{4}{3} = 4 \Rightarrow b = 3$$

$$a \cdot \frac{4}{3} = -16 \Rightarrow a = -12$$

$$a + b + c = -12 + 3 + \frac{4}{3}$$

$$= -9 + \frac{4}{3} = \frac{-23}{3} \text{ bulunur.}$$

Cevap: A

Cevap: D

$$45. \quad \sqrt{\frac{\sqrt{2} \cdot \sqrt{5} \cdot \sqrt{7} \cdot \sqrt{11}}{\sqrt{8} \cdot \sqrt{15} \cdot \sqrt{21} \cdot \sqrt{44}}} = \sqrt{\frac{1}{\sqrt{4} \cdot \sqrt{3} \cdot \sqrt{3} \cdot \sqrt{4}}}$$

$$\sqrt{\frac{1}{4 \cdot 3}} = \frac{1}{2\sqrt{3}} \text{ bulunur.}$$

Cevap: A

$$46. \quad AA \times B = AA \text{ ise } B = 1$$

$$A + A = 16 \text{ ise elde oluşmuş ise } A = 8 \text{ 'dir.}$$

$$\begin{array}{r}
88 \qquad 188 \mid 94 \\
\times 11 \qquad -188 \mid 2 \\
\hline
88 \qquad \qquad 0 \\
+ 88 \\
\hline
968
\end{array}$$

$$C = 2$$

$$O \text{ halde } A + B - C = 8 + 1 - 2 = 7 \text{ bulunur.}$$

Cevap: E



47.  $x \cdot y = -9$

$x \cdot (x - 3y - 6) = 18$

$x^2 - \underbrace{3x \cdot y}_{-9} - 6x = 18$

$x^2 + 27 - 6x = 18$

$x^2 - 6x = 18 - 27$

$$\left. \begin{array}{l} x(x-6) = -9 \\ \downarrow \quad \downarrow \\ 3 \quad -3 \end{array} \right\} x = 3$$

$\Rightarrow 3 \cdot y = -9$

$y = -3$

O halde

$x + y = 3 - 3 = 0$  olur.

Cevap: C

48. I.  $6x + \sqrt{3x+y} = 23$

$\sqrt{3x+y} = 23 - 6x$

II.  $2y - \sqrt{3x+y} = 27$

$2y - 27 = \sqrt{3x+y}$

I ve II'den

$23 - 6x = 2y - 27$

$50 = 2y + 6x$

$25 = y + 3x$  bulunur.

I.  $6x + \sqrt{25} = 23$

$6x = 23 - 5 = 18$

$x = 3$

II.  $2y - \sqrt{25} = 27$

$2y = 27 + 5 = 32$

$y = 16$

O halde  $x \cdot y = 3 \cdot 16 = 48$  bulunur.

Cevap: C

49.  $(\sqrt{5} - 1)a - b = 1 \Rightarrow b = (\sqrt{5} - 1)a - 1$  olur.

$3a - (1 + \sqrt{5})(\sqrt{5} - 1)a - 1 = \sqrt{5} - 3$

$3a - (5 - 1)a + 1 + \sqrt{5} = \sqrt{5} - 3$

$-a + 1 = -3$

$1 + 3 = a \Rightarrow a = 4$  bulunur.

Cevap: D

50.  $5^{x-1} = 2 \Rightarrow \frac{5^x}{5} = 2$

$5^x = 10$

$160 = 2^5 \cdot 5$

$(2^5 \cdot 5)^{\frac{x}{5x-4}} = ((5^{x-1})^5 \cdot 5)^{\frac{x}{5x-4}}$

$= (5^{5x-5+1})^{\frac{x}{5x-4}}$

$= 5^{5x-4 \cdot \frac{x}{5x-4}}$

$= 5^x$  bu da

$5^x = 10$  bulunur.

Cevap: B

48. I.  $6x + \sqrt{3x+y} = 23$

$\sqrt{3x+y} = 23 - 6x$

II.  $2y - \sqrt{3x+y} = 27$

$2y - 27 = \sqrt{3x+y}$

I ve II'den

$23 - 6x = 2y - 27$

$50 = 2y + 6x$

$25 = y + 3x$  bulunur.

I.  $6x + \sqrt{25} = 23$

$6x = 23 - 5 = 18$

$x = 3$

II.  $2y - \sqrt{25} = 27$

$2y = 27 + 5 = 32$

$y = 16$

O halde  $x \cdot y = 3 \cdot 16 = 48$  bulunur.

Cevap: C

49.  $(\sqrt{5} - 1)a - b = 1 \Rightarrow b = (\sqrt{5} - 1)a - 1$  olur.

$3a - (1 + \sqrt{5})(\sqrt{5} - 1)a - 1 = \sqrt{5} - 3$

$3a - (5 - 1)a + 1 + \sqrt{5} = \sqrt{5} - 3$

$-a + 1 = -3$

$1 + 3 = a \Rightarrow a = 4$  bulunur.

Cevap: D

51.  $2^1, 2^2, 2^2, 2^3, 2^3, 2^3, \dots, 2^n, 2^n, \dots, 2^n, \dots, A$

B, B, B, B, B, B, B, B, C

$2^9$ lardan

$A = 2^7, B = 2^8, C = 2^9$

$\frac{A^3 \cdot C}{B^3} = \frac{(2^7)^3 \cdot 2^9}{(2^8)^3} = \frac{2^{21} \cdot 2^9}{2^{24}} = \frac{2^{30}}{2^{24}}$

$= 2^6$

Cevap: B

52.  $M = \{ABC : A \cdot B \cdot C = 108, A > B > C\}$

$A \cdot B \cdot C = 108$

9 6 2

9 4 3 {962, 943}

$n(M) = 2$

Cevap: B

53.  $|x \cdot y| = -3x$  ifadesinden  $x < 0$  olması gerekir.

O zaman

$$-x \cdot y = -3x$$

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

Diğer ifadeye yerine yazalım.

$$\left| \frac{3}{x} \right| = 4y$$

$x < 0$  olduğundan

$$-\frac{3}{x} = 4 \cdot 3$$

$$x = \frac{-3}{12} = -\frac{1}{4}$$

O halde  $x + y = -\frac{1}{4} + 3 = \frac{11}{4}$  bulunur.

Cevap: B

55.  $A \cap B$  ortak noktalar o halde

$$x - 4 = -x \Rightarrow 2x = 4$$

$$x = 2$$

yerine yazıldığında

$$(x - 4, x + 5)$$

$(a, b) = (-2, 7)$  olur.

$B \cap C$  ortak noktalar o halde

$$x + 5 = 11 - x$$

$$2x = 6$$

$x = 3$  yerine yazıldığında

$$(-x, 11 - x)$$

$(c, d) = (-3, 8)$  olur.

$$a + d - b - c = -2 + 8 - 7 - (-3)$$

$$= -2 + 8 - 7 + 3 = 2 \text{ bulunur.}$$

Cevap: D

$$54. A = \frac{a^2 - \frac{64}{a^2}}{a^4 - 9a^2 + 8} = \frac{(a - \frac{8}{a})(a + \frac{8}{a})}{(a^2 - 8)(a^2 - 1)}$$

$$A = \frac{(a^2 - 8)(a^2 + 8)}{a^2(a^2 - 1)} = \frac{(a^2 - 8)(a^2 + 8)}{a^2(a^2 - 8)(a^2 - 1)}$$

$$A = \frac{a^2 + 8}{a^2(a^2 - 1)}$$

$$B = \frac{a^2 + 8}{a^2 - 1} = \frac{a^2(a^2 + 8)}{a^2(a^2 - 1)}$$

$$\frac{A}{B} = \frac{(a^2 + 8)}{a^2(a^2 - 1)} \cdot \frac{a^2(a^2 - 1)}{a^2(a^2 + 8)} = \frac{1}{a^4} = 81 = 3^4$$

$$\Rightarrow a = \frac{1}{3} \text{ bulunur.}$$

Cevap: A

56.

$$5y = 4x + 6$$

$$5x = 4z - 8$$

$$+ \quad 5z = 4y + 16$$

$$5(x + y + z) = 4(x + y + z) + 14$$

$$x + y + z = 14 \text{ bulunur.}$$

Cevap: E

$$57. (x + 3) \left( 1 - \frac{6}{x + 3} \right) \cdot 4 \left( 1 + \frac{6}{x - 3} \right)$$

$$= (x + 3) \left( \frac{x + 3 - 6}{x + 3} \right) \cdot 4 \left( \frac{x - 3 + 6}{x - 3} \right)$$

$$= (x + 3) \cdot 4 \left( \frac{x - 3}{x + 3} \cdot \frac{x + 3}{x - 3} \right)$$

$$= 4x + 12$$

Cevap: B

$$58. f(2^x) = \frac{3^x + 1}{2}$$

$$f(a) = 14 \Rightarrow \frac{3^x + 1}{2} = 14$$

$$3^x + 1 = 28$$

$$3^x = 27$$

$$x = 3$$

$x = 3$  için

$$a = 2^x$$

$$a = 2^3 = 8$$

$$f(2^3) = \frac{3^3 + 1}{2} = \frac{28}{2} = 14$$

O halde

$$f\left(\frac{a}{16}\right) = f\left(\frac{8}{16}\right) = f\left(\frac{1}{2}\right) = f(2^{-1})$$

$$f(2^{-1}) = \frac{3^{-1} + 1}{2} = \frac{\frac{1}{3} + 1}{2}$$

$$= \frac{\frac{4}{3}}{2} = \frac{2}{3} \text{ bulunur.}$$

Cevap: B

$$59. 5x = \frac{y}{3} = 2z = k$$

$$x = \frac{k}{5}, \quad y = 3k, \quad z = \frac{k}{2}$$

$$y - x + z = \frac{99}{2}$$

$$\frac{3k}{10} - \frac{k}{5} + \frac{k}{2} = \frac{99}{2}$$

$$\frac{30k - 2k + 5k}{10} = \frac{99}{2}$$

$$\frac{33k}{10} = \frac{99}{2}$$

$k = 15$  olduğundan

$$y = 3k = 3 \cdot 15 = 45 \text{ bulunur.}$$

Cevap: A

$$60. \frac{d}{a} = \frac{3.e}{3.b} = \frac{-1.f}{-1.c} = \frac{2}{3}$$

$$\frac{d + 3e - f}{a + 3b - c} = \frac{2}{3}$$

$$\frac{20}{-6 + 3b} = \frac{2}{3}$$

$$-12 + 6b = 60$$

$$6b = 72$$

$$b = 12 \text{ bulunur}$$

Cevap: C

TASARI EĞİTİM YAYINLARI

$$61. f(0) = 4 \text{ ve } f(1) = 6$$

$$f(x+2) + f(x+1) - 4f(x) = 2$$

$x = 0$  için

$$f(2) + f(1) - 4f(0) = 2$$

$$f(2) + 6 - \underbrace{4 \cdot 4}_{16} = 2$$

$$f(2) = 2 + 10 = 12$$

$x = 1$  için

$$f(3) + f(2) - 4f(1) = 2$$

$$f(3) + 12 - 24 = 2$$

$$f(3) = 2 + 12 = 14$$

$x = 2$  için

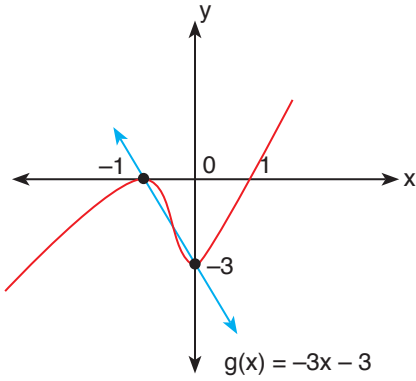
$$f(4) + f(3) - 4f(2) = 2$$

$$f(4) + 14 - 48 = 2$$

$$f(4) = 2 + 34 = 36 \text{ bulunur.}$$

Cevap: E

62.



$$g(x) = -3x - 3$$

$$x = 0 \text{ için } g(x) = y = -3$$

$$y = 0 \text{ için } 0 = -3x - 3 \Rightarrow x = -1$$

$$f(x) = 3 \cdot (x + 1)^2 \cdot (x - 1)$$

$$f(4) = 3 \cdot (4 + 1)^2 \cdot (4 - 1)$$

$$f(4) = 3 \cdot 25 \cdot 3 = 225 \text{ bulunur.}$$

Cevap: C

63.

$$\frac{1}{4+x_1} + \frac{1}{4+x_2} = \frac{4+x_2+4+x_1}{16+4x_1+4x_2+x_1 \cdot x_2}$$

$$= \frac{8+x_1+x_2}{16+4(x_1+x_2)+x_1 \cdot x_2}$$

$$f(x) = 3x^2 - 2x - 1$$

$$x_1 + x_2 = \frac{-b}{a} = \frac{2}{3}$$

$$x_1 \cdot x_2 = \frac{c}{a} = \frac{-1}{3}$$

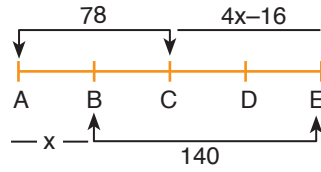
O halde

$$= \frac{8 + \frac{2}{3}}{16 + 4 \cdot \frac{2}{3} - \frac{1}{3}} = \frac{\frac{26}{3}}{16 + \frac{7}{3}} = \frac{\frac{26}{3}}{\frac{55}{3}}$$

$$= \frac{26}{55} \text{ bulunur.}$$

Cevap: D

64.



O halde

$$78 + 4x - 16 = x + 140 \text{ olur.}$$

$$3x = 140 - 62$$

$$3x = 78$$

$$x = 26$$

$$\text{Buradan } |BC| = 78 - 26 = 52 \text{ bulunur.}$$

Cevap: C

65.

$$\frac{14! - 13!}{12! + 11!} = \frac{13!(14-1)}{11!(12+1)}$$

$$= \frac{13 \cdot 12 \cdot \cancel{11!} \cdot \cancel{13}}{\cancel{11!} \cdot \cancel{13}}$$

$$= 156 \text{ bulunur.}$$

Cevap: B

66.

x, y ∈ Z olduğundan değerler alarak bulacağız.

$$-3 \leq x < 9$$

(x en büyük tamsayı olarak alınacak 8 alınır).

$$-4 < y \leq 12$$

(y en küçük tamsayı) y = -3 alınır.

$$\max(3x - 4y) = 3 \cdot 8 - 4 \cdot (-3)$$

$$= 24 + 12$$

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

Cevap: C

$$67. \quad \begin{array}{r} a + b - c = 0 \\ + \quad 3a - b + c = 8 \\ \hline 4a = 8 \Rightarrow a = 2 \end{array}$$

$$\bullet \quad 3a - b + c = 8 \Rightarrow 6 - b + c = 8 \\ -b + c = 2$$

$$\bullet \quad 2a + 2b - c = 11 \Rightarrow 4 + 2b - c = 11 \\ 2b - c = 7$$

$$\begin{array}{r} -b + c = 2 \\ + \quad 2b - c = 7 \\ \hline b = 9 \text{ bulunur.} \end{array}$$

Cevap: E

$$68. \quad x^3 + mx - 10 = (x - 2).P(x)$$

$$x = 2 \text{ için}$$

$$8 + 2m - 10 = 0$$

$$2m = 2$$

$$m = 1$$

$$x^3 + x - 10 = (x - 2).P(x)$$

$$P(x) = \frac{x^3 + x - 10}{x - 2}$$

$$P(3) = \frac{3^3 + 3 - 10}{3 - 2} = \frac{27 + 3 - 10}{1} \\ = 20 \text{ bulunur.}$$

Cevap: D

$$69. \quad \frac{P(x+2)}{Q(3x-1)} = -x^3 + 2x + 9$$

$$x = 2 \text{ için}$$

$$\frac{P(4)}{Q(5)} = -2^3 + 2 \cdot 2 + 9$$

$$\frac{P(4)}{3} = -8 + 4 + 9 = 5$$

$$P(4) = 15 \text{ bulunur.}$$

Cevap: A

70.

$$\begin{array}{l} \textcircled{3} \quad \rightarrow = 1 \cdot 2 + 1 = 3 \\ \textcircled{5} \quad \textcircled{7} \quad \rightarrow = 2 \cdot 3 + 1 = 7 \\ \textcircled{9} \quad \textcircled{11} \quad \textcircled{13} \quad \rightarrow = 3 \cdot 4 + 1 = 13 \\ \textcircled{15} \quad \textcircled{17} \quad \textcircled{19} \quad \textcircled{21} \quad \rightarrow = 4 \cdot 5 + 1 = 21 \end{array}$$

Bu şekilde satırın en büyük değeri bulunur.

$$\textcircled{78} \cdot 79 + 1 = 6163$$

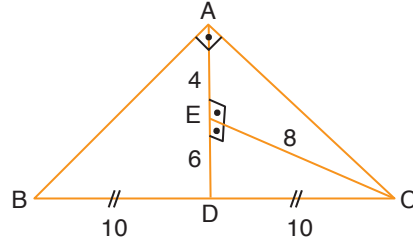


$$6163 - 77 \cdot 2 = 6163 - 154 \\ = 6009 \text{ bulunur.}$$

Cevap: B

TASARI EĞİTİM YAYINLARI

71.



Muhteşem üçlünden

$$|AD| = |BD| = |DC| = 10 \text{ cm}$$

DEC dik üçgeninden

$$|ED|^2 + |EC|^2 = |DC|^2$$

$$6^2 + x^2 = 10^2$$

$$x^2 = 100 - 36 = 64$$

$$|EC| = x = 8 \text{ cm}$$

AEC dik üçgeninden

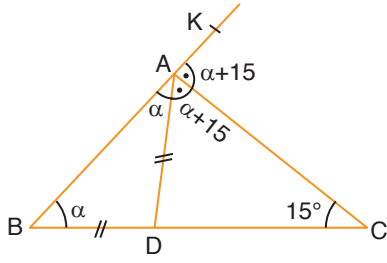
$$|AE|^2 + |EC|^2 = |AC|^2$$

$$4^2 + 8^2 = |AC|^2 \Rightarrow |AC|^2 = 16 + 64 = 80$$

$$|AC| = 4\sqrt{5} \text{ cm bulunur.}$$

Cevap: B

72.



BDA ikizkenar üçgen  $m(\widehat{BAD}) = \alpha$  dir.

O halde

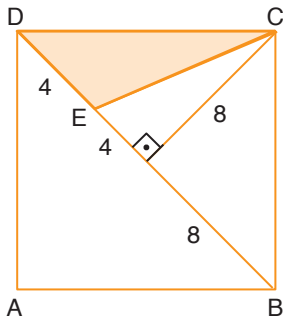
$$\alpha + \alpha + 15^\circ + \alpha + 15^\circ = 180^\circ$$

$$3\alpha = 150$$

$$\alpha = 50^\circ \text{ dir.}$$

Cevap: D

73.



Karenin köşegenleri dik kesişir ve birbirine eşittir.

[BD] köşegen (Diagonal)

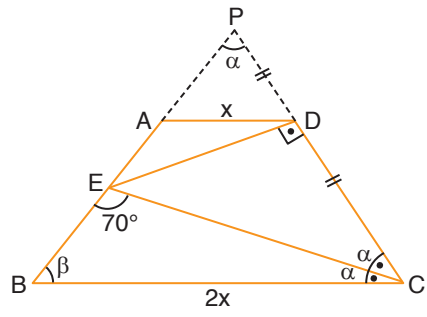
$$|DE| = 4 \text{ cm}$$

$$|BE| = 12 \text{ cm}$$

$$\text{Alan}(\widehat{DEC}) = \frac{4 \cdot 8}{2} = 16 \text{ cm}^2 \text{ dir.}$$

Cevap: C

74.



$|BC| = 2|AD| \Rightarrow$  PBC üçgeninde [AD] orta taban olur.

$|DC| = |DP|$  olup PEC üçgeni ikizkenar üçgen olur.

$$2\alpha = 70^\circ \Rightarrow \alpha = 35^\circ \text{ dir.}$$

$$\text{BEC üçgeninden } \alpha + \beta + 70 = 180$$

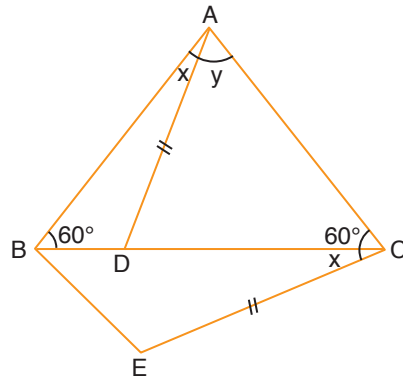
$$35 + \beta + 70 = 180$$

$$\beta = 180 - 105 = 75^\circ \text{ dir.}$$

Cevap: D

TASARI EĞİTİM YAYINLARI

75.



$\widehat{ABC}$  bir eşkenar üçgen olduğundan bu üçgenin tüm kenarları eşit ve tüm açıları eşittir.

$$m(\widehat{CAD}) + m(\widehat{BCE}) = 60^\circ$$

$$m(\widehat{BAD}) + m(\widehat{CAD}) = 60^\circ \text{ eşitliklerden}$$

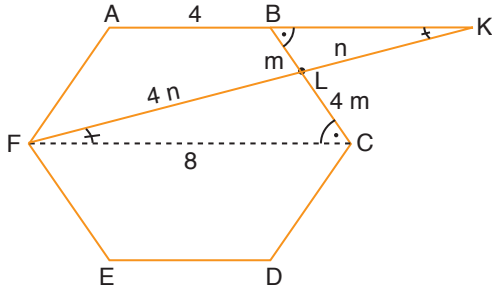
$$m(\widehat{BAD}) = m(\widehat{BCE}) \text{ bulunur.}$$

Bu durumda  $\widehat{BAD} \cong \widehat{BCE}$  (K.A.K) göre bulunur.

Böylece  $|BD| = |BE| = 2 \text{ cm}$  olur.

Cevap: B

76.



[FC] köşegeni çizilirse

$\widehat{BKL}$  ve  $\widehat{LFC}$  üçgenleri benzer olacağından

$$\frac{|BL|}{|LC|} = \frac{|BK|}{|FC|} = \frac{1}{4}$$

$|AB| = 4$  cm olduğundan  $|FC| = 8$  cm olur.

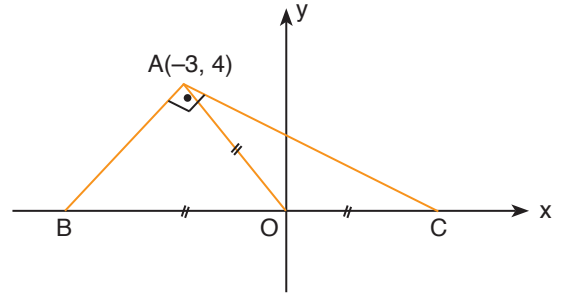
Bu durumda  $\frac{|BK|}{|FC|} = \frac{1}{4}$

$$\frac{|BK|}{8} = \frac{1}{4}$$

$$|BK| = 2 \text{ cm olur.}$$

Cevap: B

78.



$$|OA| = \sqrt{(-3, -0)^2 + (4 - 0)^2}$$

$$= \sqrt{3^2 + 4^2}$$

$$= 5$$

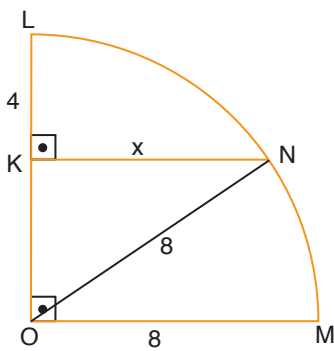
$$|BC| = 2 \cdot |OA|$$

$$= 2 \cdot 5$$

$$= 10$$

Cevap: E

77.



$$|KN|^2 + |KO|^2 = |ON|^2$$

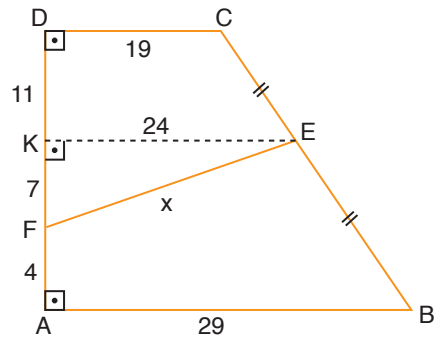
$$x^2 + 4^2 = 8^2$$

$$x^2 = 64 - 16 = 48$$

$$x = 4\sqrt{3} \text{ cm olur.}$$

Cevap: C

79.



$$|KE| = \frac{19 + 29}{2} = 24 \text{ cm}$$

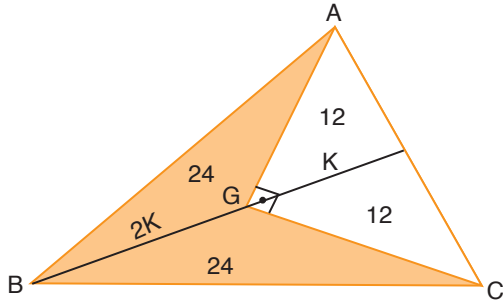
$$|KF|^2 + |KE|^2 = |EF|^2$$

$$7^2 + 24^2 = x^2$$

$$\Rightarrow x = 25 \text{ cm}$$

Cevap: E

80.



AGC dik üçgen olduğundan

$$A(\text{AGC}) = \frac{6 \cdot 8}{2} = 24 \text{ br}^2$$

$$|AD| = |CD|$$

$$A(\text{AGD}) = A(\text{GDC}) = 12 \text{ br}^2$$

G ağırlık merkezi  $|BD|$  kenarortayı  $2K - K$  oranında böler

Tabanlar oranı alanları oranına eşittir.

$$A(\text{AGD}) = 12 \text{ br}^2 \Rightarrow A(\text{ABG}) = 24 \text{ br}^2$$

$$A(\text{GDC}) = 12 \text{ br}^2 \Rightarrow A(\text{BGC}) = 24 \text{ br}^2$$

$$\text{Taralı Alan} = 24 + 24 = 48 \text{ br}^2$$

Cevap: B