

1. 2 6 21 88 ?

$$2.2 + 2 = 6$$

$$6.3 + 3 = 21$$

$$21.4 + 4 = 88$$

$$88.5 + 5 = 445 \text{ bulunur.}$$

Cevap: D

2. I. 4 12 10 30 28
 $\underbrace{\quad}_{\times 3}$ $\underbrace{\quad}_{-2}$ $\underbrace{\quad}_{\times 3}$ $\underbrace{\quad}_{-2}$

II. 13 26 23 46 43
 $\underbrace{\quad}_{\times 2}$ $\underbrace{\quad}_{-3}$ $\underbrace{\quad}_{\times 2}$ $\underbrace{\quad}_{-3}$

III. 14 10 30 26 78
 $\underbrace{\quad}_{-4}$ $\underbrace{\quad}_{\times 3}$ $\underbrace{\quad}_{-4}$ $\underbrace{\quad}_{\times 3}$

IV. 8 5 20 17 68
 $\underbrace{\quad}_{-3}$ $\underbrace{\quad}_{\times 4}$ $\underbrace{\quad}_{-3}$ $\underbrace{\quad}_{\times 4}$

Cevap: E

3. Son harf E üç adet rakamlarda E = 5 i = 3 bulunur.

Başta iki adet H var rakamlarda H = 7 olur.

$$H \dot{I} L E \rightarrow 7345 \quad L = 4$$

$$H A L E \rightarrow 7245 \quad A = 2$$

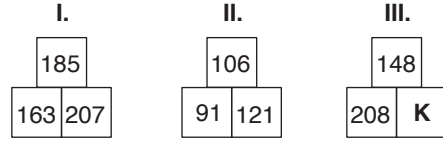
$$A \dot{I} L E \rightarrow 2345$$

$$M A V \dot{I} \rightarrow 8213 \quad M = 8, V = 1$$

$$Y E N \dot{I} \rightarrow 6593 \quad Y = 6, N = 9$$

Cevap: E

4.



alt kutuları topla 2'ye böl

$$\frac{163 + 207}{2} = \frac{370}{2} = 185$$

$$\frac{91 + 121}{2} = \frac{212}{2} = 106$$

$$\frac{208 + K}{2} = 148$$

$$208 + K = 296$$

$$K = 296 - 208$$

$$K = 88 \text{ bulunur.}$$

Cevap: A

5. ● → çarpma , ▲ → toplama

$$11 \blacktriangle (2 \bullet 9) = 11 \blacktriangle 18 = 29$$

$$9 \blacktriangle (6 \bullet 8) = 9 \blacktriangle 48 = 57$$

$$16 \blacktriangle (9 \bullet 4) = 16 \blacktriangle 36 = 52$$

$$5 \blacktriangle (11 \bullet 4) = 5 \blacktriangle 44 = 49 \text{ bulunur.}$$

Cevap: D

6.

I. $\triangle 4 + \square 2 = 9$

II. $\diamond 6 + \bigcirc 7 = 4$

III. $\text{pentagon } 8 - \triangle 2 = 12$

IV. $\text{octagon } 3 - \text{parallelogram } 7 = ?$

$$\left. \begin{array}{l} 4 + 3 = 7 \\ 4 - 2 = 2 \end{array} \right\} 7 + 2 = 9$$

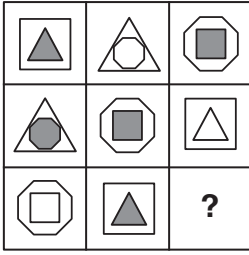
$$\left. \begin{array}{l} 6 + 4 = 10 \\ 1 - 7 = -6 \end{array} \right\} 10 - 6 = 4$$

$$\left. \begin{array}{l} 5 + 8 = 13 \\ 3 - 2 \end{array} \right\} 13 - 1 = 12$$

$$\left. \begin{array}{l} 8 + 3 = 11 \\ 4 - 7 = -3 \end{array} \right\} 11 - (-3) = 14$$

Cevap: D

7.



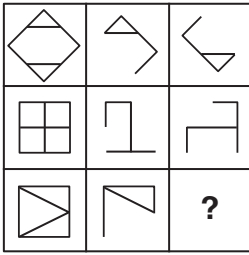
Aynı olan şekiller yok olup sağdakinin içindeki kapsayan şekil olmakta.

Bu durumda



Cevap: C

8.



II ve III. şeklin birleşimi I. şekil olmakta



Cevap: C

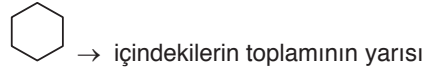
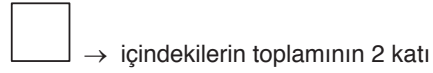
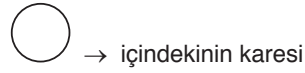
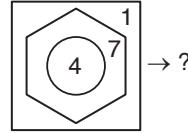
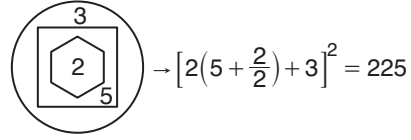
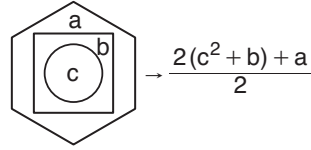
9.

$$\begin{array}{r} \text{KL}4 \mid \text{KL} \\ - 10 \\ \hline 004 \end{array}$$

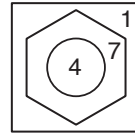
$a + b = 10 + 4 = 14$ bulunur.

Cevap: E

10.



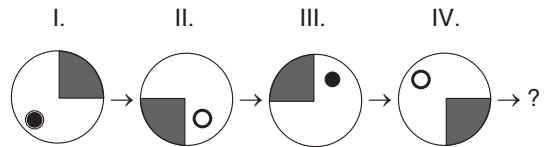
O halde



$$\begin{aligned} 2\left(\left(\frac{4^2+7}{2}\right)+1\right) &= 2 \cdot \frac{23}{2} + 2 \\ &= 23 + 2 \\ &= 25 \text{ bulunur.} \end{aligned}$$

Cevap: B

11.



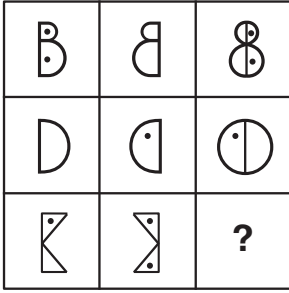
● → bir adım saat yönü ters ilerliyor bir siyah bir beyaz olmakta

→ bir adımda bir dilim ikinci adımda 2 dilim ilerlemekte.



Cevap: E

12.



II. şekil + I. şekil şeklinde birleştirilmekte.



Cevap: A

13.



Şekiller birlikte saat yönünde döndürülmekte.



Cevap: A

14.

- I. $a \bullet b = 5a + 2b$
- II. $a \bullet b = 4(a \star b) + 2$
- III. $4 \star 5 = ?$

$$4 \bullet 5 = 4(4 \star 5) + 2$$

$$5.4 + 2.5 = 4(4 \star 5) + 2$$

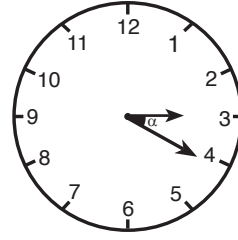
$$30 - 2 = 4(4 \star 5)$$

$$\frac{28}{4} = 4 \star 5$$

$$7 = 4 \star 5 \text{ bulunur.}$$

Cevap: B

15.



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

$$\alpha = \left| \frac{11.20 - 60.3}{2} \right|$$

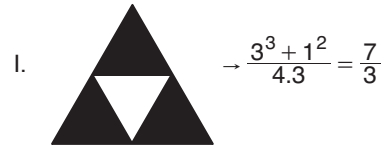
$$\alpha = \left| \frac{220 - 180}{2} \right|$$

$$\alpha = |-20| = 20^\circ \text{ bulunur.}$$

Cevap: B

TASARI EĞİTİM YAYINLARI

16.



taralı şekil sayısının küpü
+ taralı olmayan şekil sayısının karesi

şekil sayısı x taralı şekil sayısı

$$\frac{2^3 + 4^2}{6.2} = \frac{8 + 16}{12} = \frac{24}{12} = 2$$

Cevap: E

17.

+	a	b	c
a			30
b			
c			

x	a	b	c
a		112	
b			128
c			

I tablodan

$$a + c = 30$$

II. tablodan

$$a.b = 112$$

$$+ \quad b.c = 128$$

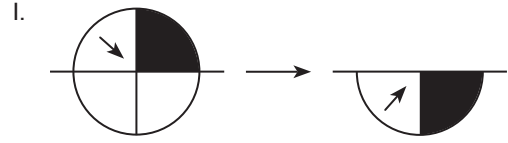
$$b(a + c) = 240$$

$$\underbrace{\quad}_{30}$$

$$b = 8$$

Cevap: E

19.

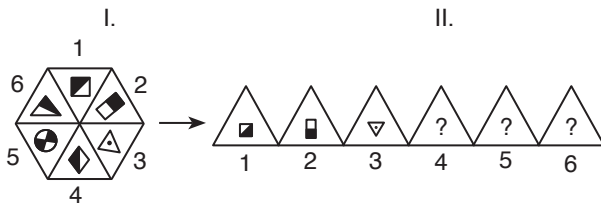


x eksenine göre simetri kısacası üstteki şekil simetri şekil-
de alttakinin üstüne düşmekte.

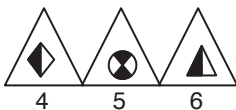


Cevap: D

18.

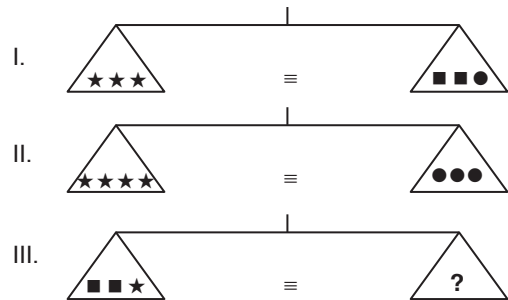


Şeklimiz düzenlendiğinde



Cevap: A

20.



$$3\star = \blacksquare \blacksquare \bullet$$

$$\downarrow \downarrow \downarrow \downarrow$$

$$6 \quad 5 \quad 5 \quad 8$$

$$4\star = 3\bullet$$

$$\downarrow \downarrow$$

$$6 \quad 8$$

$$\blacksquare \blacksquare \star$$

$$\downarrow \downarrow \downarrow$$

$$5+5+6 = 16$$

$$B) \bullet \bullet = 8 + 8 = 16$$

Cevap: B

21. I. $\Rightarrow \frac{3}{4}(a + \frac{b}{2} + \frac{3c}{4})$

II. $\Rightarrow (5 + \frac{4}{2} + \frac{3 \cdot 3}{4}) = \frac{37}{4}$

III. $\Rightarrow ?$

- \rightarrow içi
- \rightarrow içinin yarısı
- \rightarrow içinin toplamının $\frac{3}{4}$ 'ü

$$\frac{4 + 5 \cdot \frac{3}{4} + \frac{3}{2} + \frac{6}{2} + \frac{2}{2} + 6}{2} = \frac{4 + \frac{15}{4} + \frac{11}{2} + 6}{2} = \frac{40 + 15 + 22}{4} = \frac{77}{8}$$

Cevap: A

22. I. II. III. IV. V.

- \rightarrow 1. adımda 1, 2. adımda 2, 3. adımda 3, 4. adımda 4 ilerler
- \rightarrow her adımda 2 ilerliyor.
- \rightarrow 1. adım 4, 2. adımda 3, 3. adımda 2, 4. adım 1 ilerlemekte



Cevap: C

23. I. II. III. IV. V.

Cevap: D

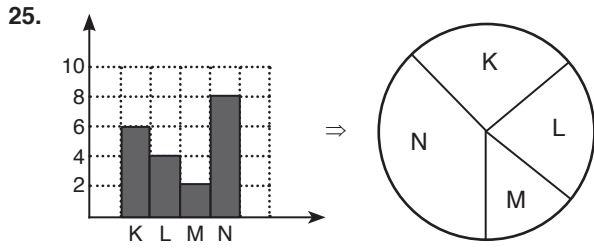
24.

V			M
L			
T	K		

Sağa doğru dönüp siyahlar beyaz beyazlar siyah olmakta son kısımda birleşmekte.



Cevap: D

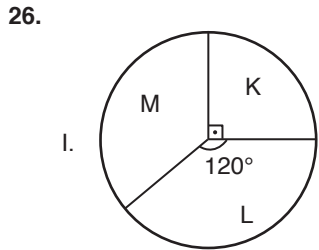


$K^\circ = ?$ $L^\circ = ?$ $M^\circ = ?$ $N^\circ = ?$

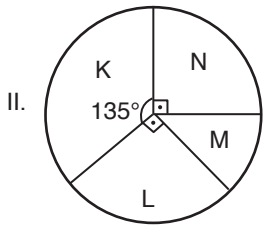
$$\begin{aligned} K &= 6a \\ L &= 4a \\ M &= 2a \\ + N &= 8a \\ \hline 20a &= 360^\circ \\ a &= 18^\circ \end{aligned}$$

$$\begin{aligned} K &= 6.18 = 108^\circ \\ L &= 4.18 = 72^\circ \\ M &= 2.18 = 36^\circ \\ N &= 8.18 = 144^\circ \end{aligned}$$

Cevap: D



$$\begin{aligned} K &= 3k \\ L &= 4k \\ M &= 5k \end{aligned}$$



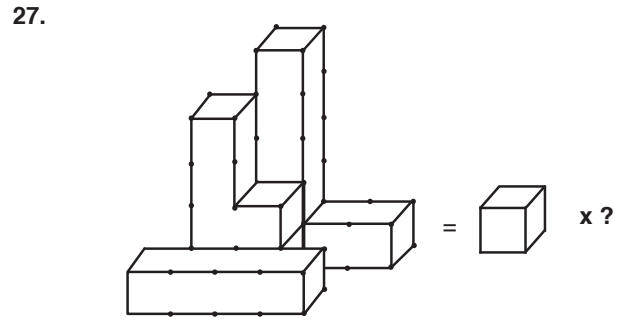
$$\begin{aligned} K &= ?k \\ L &= ?k \\ M &= ?k \\ N &= ?k \end{aligned}$$

$$\begin{aligned} K &= 3k & L &= 4k & M &= 5k \\ K &= 90^\circ & & & M &= 150^\circ \\ 4K &= 120^\circ & & & & \\ K &= 30^\circ & & & & \end{aligned}$$

II. şekilde

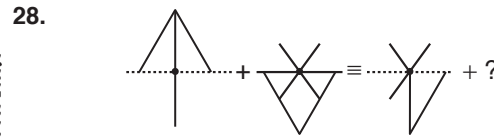
$$\begin{aligned} K &= 135^\circ & M &= 45^\circ & N &= 90^\circ & L &= 90^\circ \\ K &= 3k & M &= K & N &= 2K & L &= 2K \end{aligned}$$

Cevap: C



Şekildeki noktaları birleştirdiğimizde 17 küp elde edilmektedir

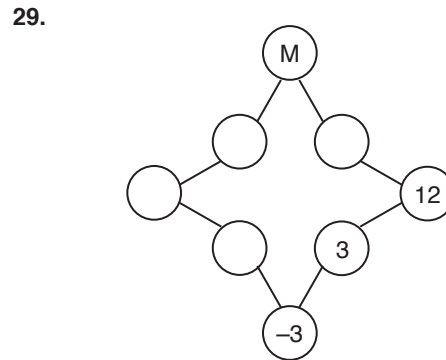
Cevap: A



Sağ tarafta eksik olan şekil



Cevap: E



$$\begin{aligned} d &= 3 & b.d &= 12 & a - b &= -3 \\ & & b &= 4 \text{ olur.} & a - 4 &= -3 \\ & & & & a &= 1 \end{aligned}$$

$$M = a^c = 1^c = 1$$

Cevap: A

TASARI EĞİTİM YAYINLARI

30.

#	♡	⊠	△	▲	■	⊙	●
♡	♡	⊠	△	▲	■	⊙	●
⊠	●	♡	⊠	△	▲	■	⊙
△	⊙	●	♡	⊠	△	▲	■
▲	■	⊙	●	♡	⊠	△	▲
■	▲	■	⊙	●	♡	⊠	△
⊙	△	▲	■	⊙	●	♡	⊠
●	⊠	△	▲	■	⊙	●	♡

$$\begin{array}{c}
 \triangle \\
 \hline
 [(\bullet \# \triangle) \# ?] \# (\odot \# \blacktriangle) = \blacktriangle \\
 \triangle \quad \# \quad \odot \\
 \blacktriangle \# ? = \triangle \\
 \downarrow \\
 \odot \text{ olur.}
 \end{array}$$

Cevap: A

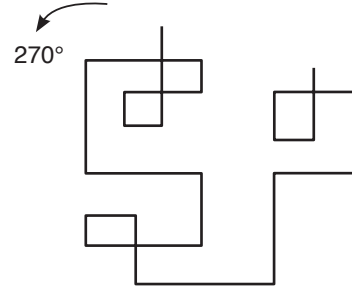
31.

		?

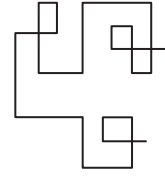


Cevap: B

32.



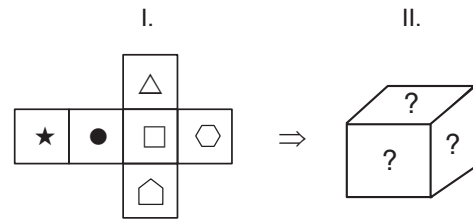
270° sola çevrildiğinde



Cevap: D

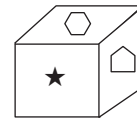
TASARI EĞİTİM YAYINLARI

33.



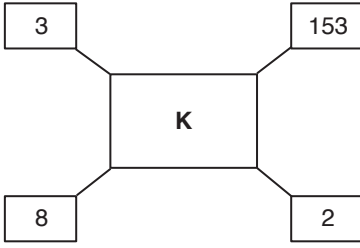
Görünmez	→	Görünen
△	→	⬠
●	→	⬡
□	→	★

Küpü topladığımızda



Cevap: A

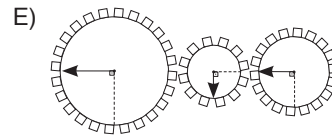
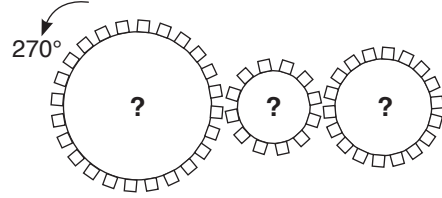
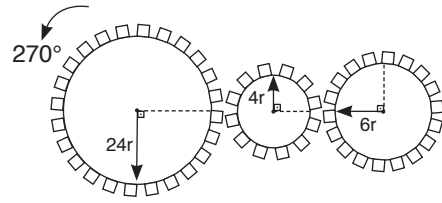
34.



$$\begin{aligned}
 b = 3 & & a^2 + b^2 = 153 & & b^2 - c^2 = 8 & & d = 2 \\
 & & a^2 + 9 = 153 & & 9 - c^2 = 8 & & \\
 & & a^2 = 144 & & 1 = c^2 & & \\
 & & a = 12 & & 1 = c & & \\
 K = \frac{a+b+c}{d^2} = \frac{12+3+1}{2^2} = \frac{16}{4} & & & & & & \\
 & & & & & & = 4
 \end{aligned}$$

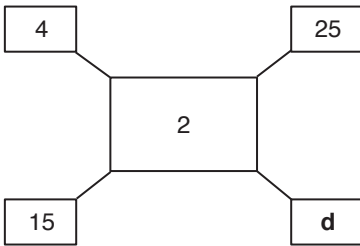
Cevap: D

36.



Cevap: E

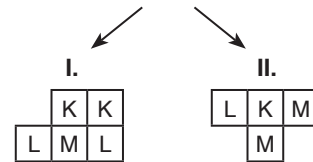
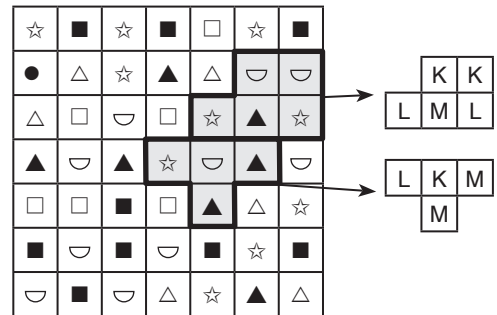
35.



$$\begin{aligned}
 b = 4 & & a^2 + b^2 = 25 & & b^2 - c^2 = 15 & & d = ? \\
 & & a^2 + 4^2 = 25 & & 16 - c^2 = 15 & & \\
 & & a^2 = 9 & & 1 = c^2 & & \\
 & & a = 3 & & 1 = c & & \\
 K = \frac{a+b+c}{d^2} & & & & & & \\
 2 = \frac{3+4+1}{d^2} \Rightarrow d^2 = \frac{8}{2} = 4 = 2^2 & & & & & & \\
 & & & & & & d = 2
 \end{aligned}$$

Cevap: B

37.

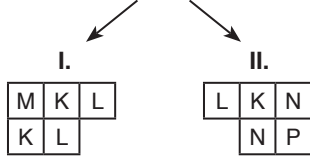
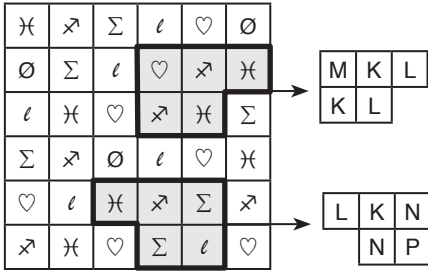


K = ◡ L = ☆
M = ▲

Cevap: E

TASARI EĞİTİM YAYINLARI

38.



M = ♡ K = ⌘ L = ⌘ N = Σ P = ℓ

Cevap: A

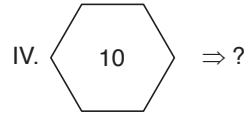
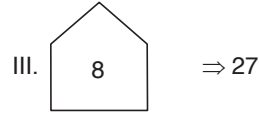
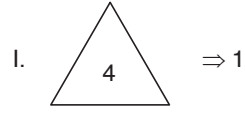
39.

★			
I.	1	0	2
II.	4	1	0
III.	0	1	0
IV.	0	2	2

I = II = III = IV =

Cevap: D

40.



- I. ((Şeklin içindeki sayı) - (Şeklin kenar sayısı))³
 = (4 - 3)³ = 1
 II. (4 - 4)³ = 0
 III. (8 - 5)³ = 3³ = 27
 IV. (10 - 6)³ = 4³ = 64

Cevap: D

41.

$$1 - \frac{1}{1 - \frac{2}{1 - \frac{1}{3}}} \cdot \frac{1}{3}$$

$$= 1 - \frac{1}{1 - \frac{2}{\frac{2}{3}}} \cdot \frac{1}{3}$$

$$= 1 - \frac{1}{1 - 3} \cdot \frac{1}{3}$$

$$= 1 + \frac{1}{2} \cdot \frac{3}{1}$$

$$= 1 + \frac{3}{2} = \frac{5}{2}$$

Cevap: B

$$\begin{aligned}
 42. \quad & \frac{12}{0,009} : \left(\frac{0,03 - 0,003}{0,6} \right)^{-1} \\
 & = \frac{12}{0,009} : \left(\frac{0,027}{0,6} \right)^{-1} \\
 & = \frac{12000}{9} : \left(\frac{600}{27} \right) \\
 & = \frac{12000}{9} \cdot \frac{27}{600} \\
 & = 60
 \end{aligned}$$

Cevap: E

$$43. \quad 16^{a-2b} = 1$$

$$81^{a+2b} = \frac{1}{9} \quad b = ?$$

$$\bullet \quad 4^{2a-4b} = 4^0 \Rightarrow 2a - 4b = 0$$

$$\bullet \quad 9^{2a+4b} = 9^{-1} \Rightarrow 2a + 4b = -1$$

O halde

$$-1/ \quad 2a - 4b = 0$$

$$2a + 4b = -1$$

$$-2a + 4b = 0$$

$$2a + 4b = -1$$

$$8b = -1$$

$$b = \frac{-1}{8}$$

Cevap: B

$$44. \quad \sqrt{\frac{9}{25} - \frac{3}{5} + \frac{1}{4}} = ?$$

$$\sqrt{\left(\frac{3}{5} - \frac{1}{2}\right)^2} = \left| \frac{3}{5} - \frac{1}{2} \right|$$

$$= \frac{1}{10} \text{ bulunur.}$$

Cevap: A

$$\begin{aligned}
 45. \quad & \frac{2^{502} + 2^{501} + 2^{500}}{2^{-504} + 2^{-503} + 2^{-502}} = \frac{2^{500}(2^2 + 2^1 + 1)}{2^{-504}(1 + 2^1 + 2^2)} \\
 & = 2^{500+504} \\
 & = 2^{1004} \text{ bulunur.}
 \end{aligned}$$

Cevap: E

$$46. \quad \frac{\sqrt{x \cdot z}}{a} = 3$$

$$\frac{\sqrt{x \cdot y}}{b} = 5$$

$$x \quad \frac{\sqrt{y \cdot z}}{c} = 7$$

$$\frac{\sqrt{x^2 \cdot y^2 \cdot z^2}}{a \cdot b \cdot c} = 3 \cdot 5 \cdot 7$$

$$\frac{x \cdot y \cdot z}{a \cdot b \cdot c} = 105 \text{ bulunur.}$$

Cevap: D

$$47. \quad a = \sqrt{(1 - \sqrt{3})^2} = \underbrace{|1 - \sqrt{3}|}_{< 0} = -1 + \sqrt{3}$$

$$b = \sqrt{(\sqrt{3} - \sqrt{12})^2} = \sqrt{(\sqrt{3} - 2\sqrt{3})^2} = \sqrt{(-\sqrt{3})^2} = \sqrt{3}$$

$$a + b = -1 + \sqrt{3} + \sqrt{3} = 2\sqrt{3} - 1$$

Cevap: B

$$48. \quad \frac{\sqrt{a}}{\sqrt{a} + \sqrt{b}} + \frac{\sqrt{b}}{\sqrt{a} - \sqrt{b}} = \frac{5}{4}$$

$$\frac{a - \sqrt{a \cdot b} + \sqrt{a \cdot b} + b}{a - b} = \frac{5}{4}$$

$$\frac{a + b}{a - b} = \frac{5}{4}$$

$$5a - 5b = 4a + 4b$$

$$a = 9b$$

$$\frac{a}{b} = 9 \text{ bulunur.}$$

Cevap: A

49. $(x^2 + y^2)^2 = (\sqrt{7})^2$
 $x^4 + y^4 + 2x^2 \cdot y^2 = 7$
 $x^4 + y^4 + 2 \cdot \underbrace{(x \cdot y)^2}_1 = 7$
 $x^4 + y^4 = 5$
 $(x^2 - y^2)^2 = x^4 + y^4 - 2x^2 \cdot y^2$
 $= 5 - 2 = 3$
 $x^2 - y^2 = \sqrt{3}$
 $x^4 - y^4 = (x^2 - y^2)(x^2 + y^2)$
 $= \sqrt{3} \cdot \sqrt{7}$
 $= \sqrt{21}$ bulunur.

Cevap: C

50. $|x - 2| < 3 \Rightarrow -3 < x - 2 < 3$
 $-1 < x < 5$
 $\underbrace{|x + 3|}_{x > 0} + \underbrace{|x - 5|}_{x < 0} + \underbrace{|x - 6|}_{x < 0}$
 $= x + 3 - x + 5 - x + 6$
 $= 14 - x$

51. $3 + \frac{7}{2 - \frac{9}{x+3}} = 2 \Rightarrow x = ?$
 $2 - \frac{9}{x+3} = -7$
 $2 + 7 = \frac{9}{x+3} \Rightarrow \frac{9}{1} = \frac{9}{x+3}$
 $x + 3 = 1 \Rightarrow \boxed{x = -2}$

Cevap: B

52. $-2/ \quad 3a - 3b + 4c = 7$
 $2a - 6b + 8c = 2$
 $-6a + 6b - 8c = -14$
 $+ \quad 2a - 6b + 8c = 2$
 $-4a = -12$
 $a = 3$

Cevap: A

53. $\underbrace{1 - 4}_{-3} + \underbrace{2 - 5}_{-3} + \underbrace{3 - 6}_{-3} + \dots + \underbrace{17 - 20}_{-3} = A$

Terim sayısı : $\frac{17 - 1}{1} + 1 = 17$

O halde

$A = -3 \cdot 17 = -51$ bulunur.

Cevap: E

54. $(63)_{10} = (223)_m$
 $6 \cdot 10^1 + 3 \cdot 10^0 = 2 \cdot m^2 + 2 \cdot m^1 + 3 \cdot m^0$
 $60 + 3 = 2m^2 + 2m + 3$

$2m^2 + 2m - 60 = 0$

$m^2 + m - 30 = 0$

$(m + 6)(m - 5) = 0$

$m = -6$ ve $m = 5$

Cevap: B

Cevap: B

55. $\frac{A}{2} \Big| \frac{B}{3}$ $\frac{B}{2} \Big| \frac{4}{c}$

$A = 3B + 2$

$B = 4c + 2$

$A = 3(4c + 2) + 2$

$A = 12c + 8$

\downarrow
1

$\min(A) = 20$ bulunur.

Cevap: C

Cevap: B

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

$3a = 4b$

$\frac{a}{b} = \frac{4k}{3k}$ $\frac{b}{c} = \frac{3k}{8k}$

O halde $k = 1$ için

$a = 4, \quad b = 3, \quad c = 8$

$\min(a + b + c) = 4 + 3 + 8 = 15$ bulunur.

Cevap: D

57. $\frac{(n-2)!}{(n+1)!} = \frac{1}{336}$

$$\frac{(n-2)!}{(n-2)!(n-1).n.(n+1)} = \frac{1}{336}$$

$$(n-1).n.(n+1) = 336$$

$$6.7.8 = 336$$

$$n = 7$$

Cevap: C

58. x, y birer tamsayı

$$\left. \begin{array}{l} -3 \leq x < 8 \\ -6 < y \leq 14 \end{array} \right\} \max(2x - 3y) = ?$$

x ve y tamsayı olduğu için değer veririz.

$$x \rightarrow \max \quad y \rightarrow \min \text{ olmalı}$$

$$-3 \leq x < 8 \rightarrow \max(x) = 7$$

$$-6 < y \leq 14 \rightarrow \min(y) = -5$$

$$\begin{aligned} \Rightarrow \max(2x - 3y) &= 2.7 - 3.(-5) \\ &= 14 + 15 \\ &= 29 \end{aligned}$$

Cevap: D

59. $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{1}{6}$

$$\frac{3a - 2c + e}{3b - 2d + f} = \frac{1}{6}$$

$$\frac{4}{3b - 9} = \frac{1}{6}$$

$$3b - 9 = 24$$

$$3b = 33$$

$$b = 11$$

$$\frac{a}{b} = \frac{1}{6}$$

$$\frac{a}{11} = \frac{1}{6} \Rightarrow a = \frac{11}{6} \text{ bulunur.}$$

Cevap: B

60. $A = \{x / x < 100, \quad x = 2n, \quad n \in \mathbb{Z}^+\}$

$$B = \{x / x < 151, \quad x = 3n, \quad n \in \mathbb{Z}^+\}$$

$$A = \{2, 4, 6, 8, 10, \dots, 98\}$$

$$B = \{3, 6, 9, \dots, 150\}$$

$$S(A \cup B) = S(A) + S(B) - S(A \cap B)$$

$$A \text{ kümesinin eleman sayısı: } \frac{98-2}{2} + 1 = 49$$

$$B \text{ kümesinin eleman sayısı: } \frac{150-3}{3} + 1 = 50$$

$$A \cap B = \{6, 12, 18, \dots, 96\}$$

$$A \cap B \text{ kümesinin eleman sayısı: } \frac{96-6}{6} + 1 = 16$$

$$\begin{aligned} S(A \cup B) &= 49 + 50 - 16 \\ &= 83 \text{ bulunur.} \end{aligned}$$

Cevap: D

61. $x - \frac{1}{y} = 5 \rightarrow x.y - 1 = 5y$

$$y - \frac{1}{x} = 4 \rightarrow x.y - 1 = 4x$$

$$5y = 4x$$

$$\downarrow \quad \downarrow$$

$$4k \quad 5k$$

$$x = 5k \text{ ve } y = 4k$$

$$\frac{x+y}{x-y} = \frac{5k+4k}{5k-4k} = \frac{9k}{k} = 9 \text{ bulunur.}$$

Cevap: C

62. $(x^2 - 1) : \frac{1 - \frac{1}{x}}{1 + \frac{1}{x}}$

$$(x^2 - 1) : \frac{\frac{x-1}{x}}{\frac{x+1}{x}}$$

$$(x^2 - 1) : \frac{(x-1)(x+1)}{x}$$

$$\cancel{(x-1)} \cdot (x+1) \cdot \frac{x+1}{\cancel{(x-1)}} = (x+1)^2 \text{ bulunur.}$$

Cevap: E

TASARI EĞİTİM YAYINLARI

63. $(a - \frac{1}{a})^2 = (2\sqrt{15})^2$ $(a + \frac{1}{a})^2 = (x)^2$
 $a^2 + \frac{1}{a^2} - 2 = 60$ $a^2 + \frac{1}{a^2} + 2 = x^2$
 $a^2 + \frac{1}{a^2} = 62$ $62 + 2 = x^2$
 $64 = x^2$
 $x = 8$ bulunur.

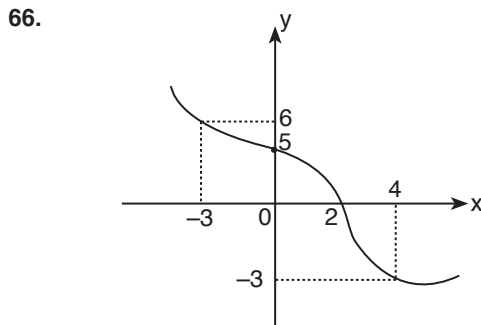
Cevap: C

64. $2x + 1 \equiv 6 \pmod{7}$
 $x = 6$ için
 $13 \equiv 6 \pmod{7}$

Cevap: D

65. $f(1 + \frac{x}{8}) = \frac{x}{2} - 1$
 $f^{-1}(\frac{x}{2} - 1) = 1 + \frac{x}{8}$
 $(g \circ f^{-1})(3) = g \circ f^{-1}(3)$
 $x = 8$ için
 $f^{-1}(3) = 1 + \frac{8}{8} = 2$
 $g(2) = 3x + 1 = 6 + 1 = 7$ bulunur.

Cevap: C



$f(-3) = 6$ olduğundan $f^{-1}(6) = -3$ 'tür.
 $f(6) = f(x - 1) \rightarrow f(x - 1) = -3$ için $f(4) = -3$ olmak üzere
 $x - 1 = 4 \rightarrow x = 5$ bulunur.

Cevap: A

67. $x^2 - (2a - b)x - 2a = 0$ denkleminin kökleri $x_1 = a$ ve $x_2 = b$ olmak üzere;
 $x_1 + x_2 = \frac{-b}{a} \rightarrow a + b = \frac{2a - b}{1} \rightarrow 2b = a$ bulunur.
 $x_1 \cdot x_2 = \frac{c}{a} \rightarrow a \cdot b = \frac{-2a}{1}$ ise $b = -2$ ve $2b = a$ için
 $a = -4$ bulunur.

$a = -4$ ve $b = -2$ için;

$x^2 + 6x + 8 = 0$ denklemini yazılır.

$\Delta = b^2 - 4ac = 36 - 4 \cdot 1 \cdot 8 = 36 - 32 = 4$ bulunur.

Cevap: A

68. $Q(x) \mid x - 3 \rightarrow Q(x) = (x - 3) \cdot B(x) + 2$ yazılabilir.
 Bu ifadeye x yerine $x + 2$ yazılırsa;
 $Q(x + 2) = (x - 1) \cdot B(x + 2) + 2$ olur.

$P(x + 1) = 2x \cdot Q(x + 2) + 5$ eşitliğinde $Q(x + 2)$ yerine bulunan ifade yazılırsa;

$P(x + 1) = 2x \cdot ((x - 1) \cdot B(x + 2) + 2) + 5$ elde edilir.

$x = 1$ için;

$P(2) = 2(0 \cdot B(3) + 2) + 5$?? $P(2) = 2 \cdot 2 + 5 = 9$ bulunur.

Cevap: D

69. $P(x) = mx^4 + x^3 + nx - 2$

$P(x) \mid x^2 - 1 \rightarrow x^2 = 1$ yazılırsa sonuç 0 olmalıdır.

$m \cdot (x^2)^2 + x^2 \cdot x + nx - 2 = 0$
 $1 \quad 1$

$m + x + nx - 2 = 0$ $m - 2 = 0$ $n = -1$ $m + n = 1$
 $m = 2$

Cevap: D

70. $\log_3 4 \cdot \log_4 5 \cdot \log_5 6 \cdot \log_6 7 \cdot \log_7 8 = m$

$\log_3 2^3 = m \quad 3 \cdot \log_3 2 = m \quad \log_3 2 = \frac{m}{3}$

$\log_3 16 = \log_3 2^4 = 4 \cdot \log_3 2 = 4 \cdot \frac{m}{3} = \frac{4m}{3}$

Cevap: E

71. $z = \frac{5 - 12i}{3 + 4i} \quad z \cdot \bar{z} = |z|^2 \quad |z| = \frac{\sqrt{5^2 + (-12)^2}}{\sqrt{3^2 + 4^2}}$

$|z| = \frac{13}{5} \quad |z|^2 = \frac{169}{25}$

Cevap: A

72. $\prod_{k=2}^{15} \log_k (k+1) = \log_2 3 \cdot \log_3 4 \cdot \log_4 5 \cdot \dots \cdot \log_{11} 16$
 $= \log_2 16 = 4$

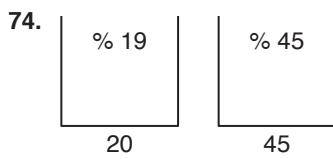
Cevap: A

73. $a_n = \frac{2^n}{n!}$

$\frac{a_{n+1}}{a_n} = \frac{\frac{2^{n+1}}{(n+1)!}}{\frac{2^n}{n!}} = \frac{2^{n+1}}{(n+1)!} \cdot \frac{n!}{2^n} = \frac{2^n \cdot 2^1}{(n+1) \cdot n!} \cdot \frac{n!}{2^n} \cdot \frac{2}{n+1}$

$\frac{2}{n+1} = \frac{2}{5} \quad n = 4$

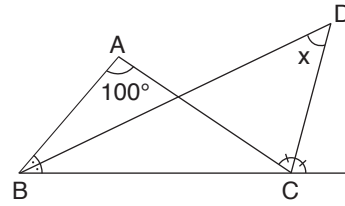
Cevap: C



$19 \cdot 20 + 45 \cdot 45 = x \cdot 65$
 $380 + 2025 = 65 \cdot x$
 $2405 = 65x$
 $x = 37$

Cevap: A

75.

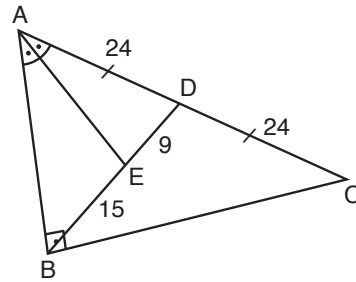


$x = \frac{100}{2}$

$x = 50^\circ$

Cevap: A

76.

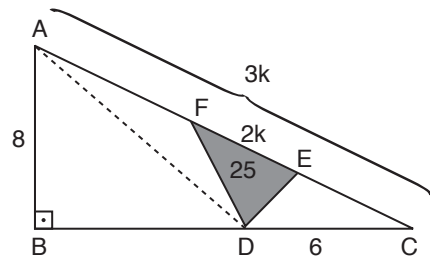


$\frac{x}{15} = \frac{8}{9}$

$= x = 40$

Cevap: B

77.



$A(\widehat{ADC}) = \frac{8 \cdot 6}{2} = 24$

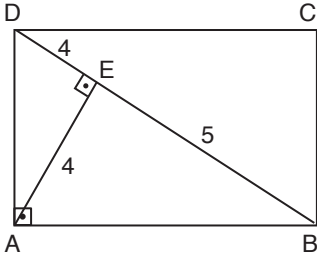
$3S = 24 \quad S = 8$

$2S = A(FDE)$

$2 \cdot 8 = 16$

Cevap: A

78.



$$h^2 = 4.5$$

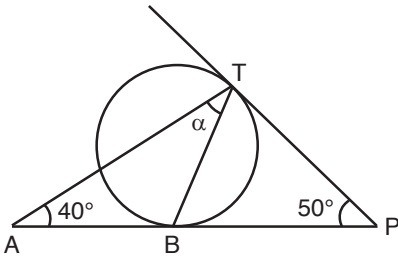
$$h = 2\sqrt{5}$$

$$A(\triangle ABD) = \frac{2\sqrt{5} \cdot 9}{2} = 9\sqrt{5}$$

$$A(\text{ABCD}) = 2 \cdot 9\sqrt{5} = 18\sqrt{5}$$

Cevap: A

79.



\widehat{APT} üçgeninde $m(\widehat{ATP}) = 90^\circ$ dir.

Bu nedenle $m(\widehat{CTB}) = 180^\circ$ dir.

Çevre açıdan $m(\widehat{CB}) = 2\alpha$ dir.

$$m(\widehat{TB}) + 50^\circ = 180^\circ$$

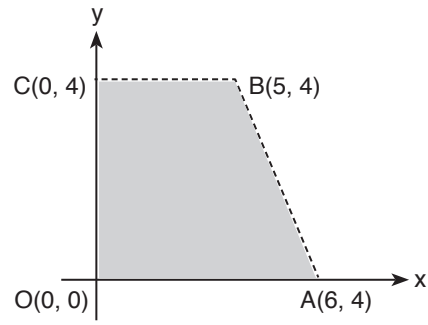
$$m(\widehat{TB}) = 130^\circ$$

$$130^\circ + 2\alpha = 180^\circ \rightarrow 2\alpha = 50^\circ$$

$$\alpha = 25^\circ$$

Cevap: C

80.



$$\text{Yamuk Alanı} = \frac{(\text{Alt taban} + \text{Üst taban})}{2} \cdot \text{Yükseklik}$$

$$A = \frac{(6 + 5)}{2} \cdot 4 = 22$$

Cevap: B