*Bu testte cevaplayacağınız toplam soru sayısı 80'dir.*

**1.** $$\frac{3-2\cdot\frac{5}{3}-5}{\frac{-2-\frac{2}{3}}{3}} = \frac{-2-\frac{10}{3}}{\frac{-8}{9}}$$

$$= \frac{-\cancel{16}^{2}}{\cancel{3}} \cdot \frac{-\cancel{9}^{3}}{\cancel{8}} = 6$$

**Cevap: C**

**2.** $$a = \frac{b^2+180}{b^2}$$

$$a = \frac{b^2}{b^2} + \frac{180}{b^2}$$

$$a = 1 + \frac{180}{b^2}$$

b = 6 için

$$a = 1 + \frac{180}{36} = 1 + 5 = 6$$

**Cevap: A**

**3.** $m = 1,2020\ldots = 1,\overline{20} = \frac{120-1}{99} = \frac{119}{99}$

$n = 0,4040\ldots = 0,\overline{40} = \frac{40-0}{99} = \frac{40}{99}$

$$\frac{m+1}{n} = \frac{\frac{119}{99}+1}{\frac{40}{99}} = \frac{\frac{218}{\cancel{99}}}{\frac{40}{\cancel{99}}} = \frac{218}{40}$$

$$= 5,45$$

**Cevap: E**

**4.** $$\frac{2.x}{2.a} = \frac{3.y}{3.b} = \frac{z}{c} = \frac{3}{4}$$

$$\frac{2x+3y+z}{2a+3b+c} = \frac{3}{4}$$

$$\frac{\cancel{18}^{6}}{20+c} = \frac{\cancel{3}}{4} \Rightarrow 24 = 20 + c$$

$$c = 4$$

**Cevap: C**

**5.** $b = \sqrt[6]{27^a} = 27^{\frac{a}{6}} = 3^{3\cdot\frac{a}{6}}$

$$b = 3^{\frac{a}{2}} \Rightarrow 3^a = b^2$$

$3^{2a+3} = (3^a)^2.3^3$

$= (b^2)^2.27 = 27b^4$

**Cevap: E**

**6.** $\frac{a}{5}\left|\frac{c}{4}\right. \rightarrow a = 4c + 5$

$\frac{c}{4}\left|\frac{6}{x}\right. \rightarrow c = 6x + 4$

$\Rightarrow a = 4(6x + 4) + 5$

$a = 24x + 21$

12 | 9 = y

**Cevap: E**

**7.** $(\sqrt[3]{-1})^2.\sqrt{(0,09)^{-1}}$

$$1.\sqrt{\frac{100}{9}} = 1.\frac{10}{3} = \frac{10}{3}$$

**Cevap: A**





*Diğer Sayfaya Geçiniz.*

**8.** $0 < x < 3 \rightarrow 0 < 2x < 6$

$-3 < y < 2 \rightarrow + \quad -6 < -3y < 9$

$-6 < 2x - 3y < 15$

**Cevap: B**

**9.** $\dfrac{x}{x+1} - \dfrac{1}{1-\frac{1}{x}} = 1$

$\dfrac{x}{x+1} - \dfrac{1}{\frac{x-1}{x}} = 1$

$\dfrac{x}{x+1} - \dfrac{x}{x-1} = 1 \quad \Rightarrow \quad \dfrac{\cancel{x^2} - x - \cancel{x^2} - x}{x^2-1} = 1$

$x-1 \quad x+1$

$-2x = x^2 - 1 \quad \Rightarrow \quad x^2 + 2x - 1 = 0$

$\Delta = 4 + 4 = 8 \quad \Rightarrow \quad x_1 = \dfrac{-2+\sqrt{8}}{2}$

$x_1 = -1 + \sqrt{2}$

**Cevap: E**

**10.** $\begin{array}{r} {}^{6}A\ B^{5}C = 0 \\ +\quad B^{5}A \\ \hline 7\ C\ A \\ 0 \end{array}$

$\Rightarrow A + B + C = 6 + 5 = 0 = 11$

**Cevap: C**

**11.** $\dfrac{(-3)^2}{(-3)^4 \cdot \left(\frac{-1}{3}\right)^3} = \dfrac{9}{81 \cdot \frac{-1}{27}}$

$= \dfrac{9}{-3} = -3$

**Cevap: B**

**12.** $\dfrac{1}{x} = 3 - y \quad \Rightarrow \quad 1 = 3x - xy$

$\dfrac{1}{y} = 4 - x \quad \Rightarrow \quad 1 = 4y - xy$

$\Rightarrow \quad 3x - xy = 4y - xy$

$3x = 4y \quad \Rightarrow \quad \dfrac{x}{y} = \dfrac{4}{3}$

**Cevap: D**

**13.** $4a^2 + b^2 = 37$

$a = 3 \quad ve \quad b = 1 \quad için$

$4.3^2 + 1^2 = 37$

$\Rightarrow \quad a + b = 3 + 1 = 4$

**Cevap: B**

**14.** $\dfrac{a^{2x} + 4a^2 - 5}{a^{2x} - a^x}$

$\dfrac{(a^x+5)(\cancel{a^x-1})}{a^x(\cancel{a^x-1})} = \dfrac{a^x+5}{a^x}$

**Cevap: A**

**15.** $\dfrac{x^2 - xy + y^2}{x^4 - x^2y^2} \cdot \dfrac{(x^2+xy)^3}{x^4+xy^3}$

$\dfrac{(x^2 - xy + yz)}{x^2(x-y)(x+y)} \cdot \dfrac{x^3(x+y)^3}{x(x^3+y^3)}$

$\dfrac{(\cancel{x^2 - xy + y^2})}{\cancel{x^2}(x-y)(\cancel{x+y})} \cdot \dfrac{\overset{x+y}{\cancel{x^3}(\cancel{x+y})^3}}{\cancel{x}.(\cancel{x+y})(\cancel{x^2 - xy + y^2})}$

$= \dfrac{x+y}{x-y}$

**Cevap: B**

**16.** $\frac{1}{x_1^3}+\frac{1}{x_2^3}=\frac{x_1^3+x_2^3}{(x_1.x_2)^3}$

$=\frac{(x_1+x_2)\left(x_1^2-x_1x_2+x_2^2\right)}{(x_1x_2)^3}$

$=\frac{5.\left(x_1^2+x_2^2-5\right)}{5^3}$ $\left(\begin{array}{l} x_1+x_2=5 \\ x_1^2+x_2^2+2\underbrace{x_1.x_2}_{5}=25 \\ x_1^2+x_2^2=15 \end{array}\right)$

$5\cdot\frac{15-3}{5^3}=\frac{5.10}{5^3}=\frac{10}{25}=\frac{2}{5}$

**Cevap: B**

**17.** $\frac{n!+(n-1)!}{n!-(n-1)!}=\frac{4}{3}$

$\frac{\cancel{(n-1)!}(n+1)}{\cancel{(n-1)!}(n-1)}=\frac{4}{3}$

$3n+3=4n-4$

$7=n$

**Cevap: C**

**18.** $18^{18}\equiv x(\text{mod}8)$

$2^{18}\equiv x(\text{mod}8)$

$2^3.2^{15}=x(\text{mod}8)$

$8.2^{15}\equiv x(\text{mod}8)$

$\Rightarrow x=0$

**Cevap: E**

**19.** $|3x-6|=6-3x$

$6-3x\geq 0$

$6\geq 3$

$x\leq 2$

**Cevap: E**

**20.** $(f^{-1}og^{-1})(x)=\frac{x-5}{3}$

$\Rightarrow \frac{x-5}{3}=3 \Rightarrow x-5=9$

$x=14$

**Cevap: D**

**21.** $f(x)=3^{x-1} \Rightarrow f(x)=3^x.\frac{1}{3} \Rightarrow f(x).3=3^x$

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

$=(3^x)^2.3$

$=\left(3f(x)\right)^2.3$

$=27.f^2(x)$

**Cevap: E**

**22.** $x=2t-1 \Rightarrow \frac{x+1}{2}=t$

$y=t+5 \Rightarrow y-5=t$

$\Rightarrow \frac{x+1}{2}=y-5$

$y=\frac{x+1}{2}+5 \Rightarrow y=\frac{x+11}{2}$

$\Rightarrow f^{-1}(x)=2x-11$

**Cevap: D**

**23.** $\frac{30^a+30^a}{10^a+10^a+10^a+10^a+10^a+10^a}=81$

$\frac{2.30^a}{6.10^a}=81$

$\frac{1}{3}\cdot\left(\frac{30}{10}\right)^a=81$

$\Rightarrow 3^a=3.3^4=3^5$

$a=5$ bulunur.

**Cevap: D**





*Diğer Sayfaya Geçiniz.*

**24.** $P(3) = 9a + 3b + c = 0$

$P(2) = -\ 4a + 2b + c = 0$

$5a + b = 0 \Rightarrow b = -5a \Rightarrow \frac{b}{a} = -5$

**Cevap: C**

**25.** $Ç = \frac{1}{x_1} \cdot \frac{1}{x_2} = \frac{1}{x_1.x_2} = \frac{1}{4}$

$T = \frac{1}{x_1} + \frac{1}{x_2} = \frac{x_1 + x_2}{x_1.x_2} = \frac{3}{4}$

$9(x) = x^2 - Tx + Ç$

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

$= 4x^2 - 3x + 1$

**Cevap: D**

**26.** $a.b = 12$

$b.c = 60$

$x \quad a.c = 80$

$(a.b.c)^2 = 12.60.80$

$(a.b.c)^2 = 12.12.5.5.16$

$\underbrace{a.b.c}_{12} = 12.5.4$

$c = 20$ bulunur.

**Cevap: E**

**27.** $-x \,/\ x^3 - 2y = 5$

$x^4 - 2xy = 70$

$-x^4 + 2xy = -5x$

$+ \quad x^4 - 2xy = 70$

$0 = -5x + 70$

$5x = 70$

$x = 14$ bulunur.

**Cevap: C**

**28.** $f(x) = a.(x - 1)(x - 3)$

$2 = a.(-1).(-3)$

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

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

$f(x) = \frac{2x^2}{3} - \frac{8x}{3} + 2$

$r = \frac{-b}{2a} = \frac{\frac{8}{3}}{\frac{4}{3}} = 2$

$f(r) = k = \frac{2.4}{3} - \frac{8.2}{3} + 2 = -83 + 2 = -\frac{2}{3}$

$r + k = 2 - \frac{2}{3} = \frac{4}{3}$

**Cevap: A**

**29.** $\frac{81x^4 + 1}{9x^2} = \frac{81x^4}{9x^2} + \frac{1}{9x^2}$

$= 9x^2 + \frac{1}{9x^2}$ A olsun

$\left(3x + \frac{1}{3x}\right)^2 = (8)^2$ (Her iki tarafın karesi alınsın)

$9x^2 + \frac{1}{9x^2} + 2.3x.\frac{1}{3x} = 64$

$9x^2 + \frac{1}{9x^2} = 62$ bulunur.

**Cevap: D**

**30.** $\sum_{k=1}^{5} \prod_{n=1}^{3} 2nk = \sum_{k=1}^{5} (2k.4k.6k)$

$\sum_{k=1}^{5} 48k^3 = 48(1^3 + 2^3 + 3^3 + 4^3 + 5^3)$

$= 48.(1 + 8 + 27 + 64 + 125)$

$= 10800$

**Cevap: E**

**31.** $\underbrace{3021-3020}_{1}+\underbrace{3019-3018}_{1}+\ldots+\underbrace{3-2}_{1}+1=?$

1510 adet 1 var.

**Cevap: B**

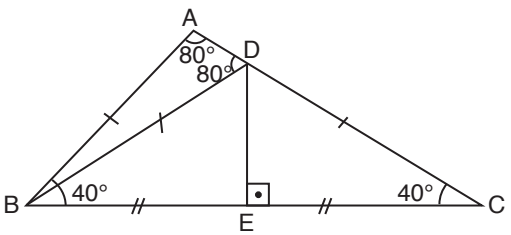
**32.** $(2a)_5 = (1101)_2$

$2.5^1 + a.5^0 = 1.2^3 + 1.2^2 + 0.2^1 + 1.2^0$

$10 + a = 13 \Rightarrow \boxed{a = 3}$

**Cevap: D**

**33.**




B ile D'yi birleştirelim.

BDC üçgeninde [DE] hem yükseklik hem kenarortay olduğundan BDC ikizkenar üçgen

$|BD| = |DC|$ $m(\widehat{DBC}) = m(\widehat{DCB}) = 40°$

BDC üçgeninde iki iç açı toplamı kendisine komşu olmayan dış açıya eşittir.

$m(\widehat{ADB}) = 40° + 40° = 80°$

$|AB| = |BD|$ olduğundan $m(\widehat{BAD}) = 80°$

O halde

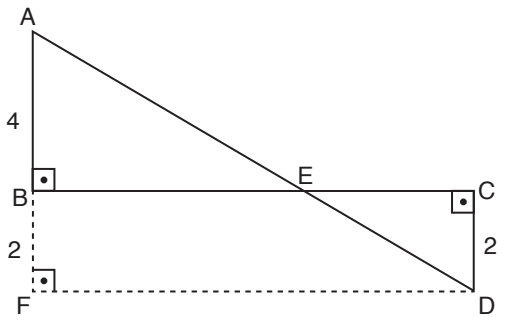
$m(\widehat{ABD}) + 80 + 80 = 180$

$m(\widehat{ABD}) = 20°$

$m(\widehat{ABE}) = x = 20 + 40 = 60°$ bulunur.

**Cevap: E**

**34.**




AFD dik üçgeninde pisagor teoreminden

$6^2 + |FD|^2 = 10^2$

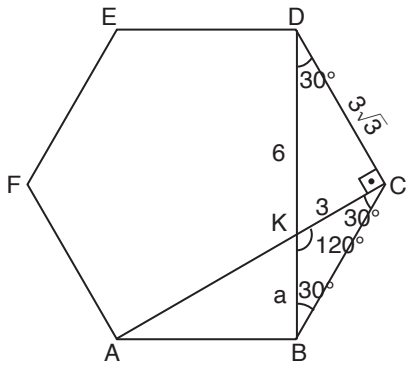
$|FD|^2 = 100 - 36 = 64$

$|FD| = 8$ cm

$|BC| = |FD|$ olduğundan $|BC| = 8$ cm

**Cevap: E**

**35.**




DKC üçgeninde $|DK| = 6$ cm $\Rightarrow$ $|KC| = 3$ cm

$|DC| = 3\sqrt{3}$ cm'dir.

$|KC| = |BK| = a = 3$ cm

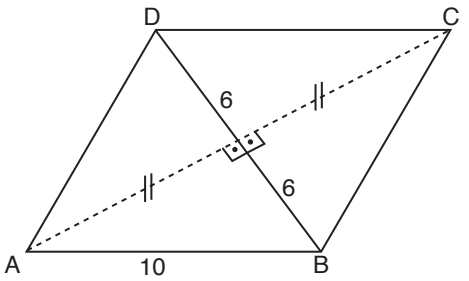
**Cevap: B**





*Diğer Sayfaya Geçiniz.*

**36.**




$[AC] \perp [BD]$

$|DO| = |OB| = 6$ br olur.

AOB üçgeninde pisagor teoreminde

$|AO|^2 + |OB|^2 = |AB|^2$

$|AO|^2 + 6^2 = 10^2$

$|AO|^2 = 100 - 36 = 64$

$|AO| = 8$ br

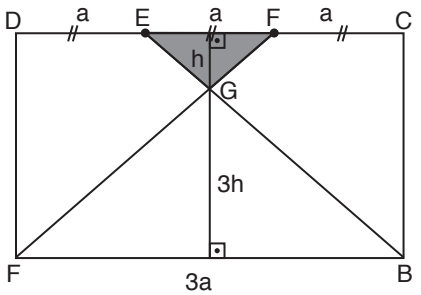
$|AO| = 8$ br $\Rightarrow$ $|AC| = 16$ br'dir.

$$A(ABCD) = \frac{|AC|.|BD|}{2} = \frac{16.12}{2}$$

$$= 96 \text{ br}^2$$

**Cevap: C**

**37.**




EFG üçgeni ile AGB üçgeni benzerdir. Benzerlik oranı 3'tür. Buna göre [EF]'ye ait yükseklik h ise [AB] ait yükseklik 3h'tır.

$$A(EGF) = \frac{a.h}{2}$$

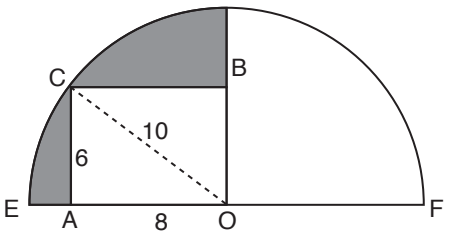
$$3 = \frac{a.h}{2} \Rightarrow a.h = 6 \text{ cm}^2$$

$A(ABCD) = 3a.4h$

$= 12.a.h = 12.6 = 72 \text{ cm}^2$

**Cevap: A**

**38.**



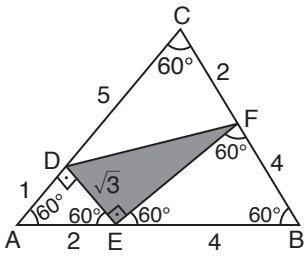

$10^2 = 6^2 + |OA|^2 \Rightarrow |OA| = 8$

$$T.A = \frac{1}{4}\pi.10^2 - 6.8$$

$$= 25\pi - 48 \text{ cm}$$

**Cevap: B**

**39.**




ADE üçgeninde 30, 60, 90 üçgeni

$|AD| = 1$ br $|AE| = 2$ br ve $|DE| = \sqrt{3}$ br

$|AC| = 6$ br $|EB| = 4$ br olup

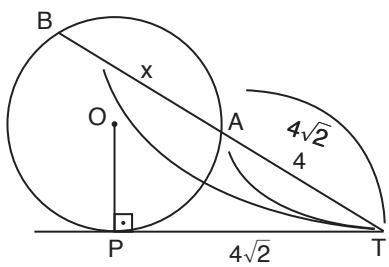
EFB eşkenar üçgen olduğundan $|EF| = 4$ br olur.

O halde

$$A(\widehat{DEF}) = \frac{4.\sqrt{3}}{2} = 2\sqrt{2} \text{ br}^2$$

**Cevap: C**

**40.**



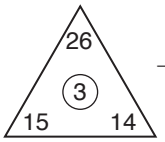

$(4\sqrt{2})^2 = 4.(4 + x)$

$32 = 16 + 4x$

$16 = 4x \Rightarrow x = 4$

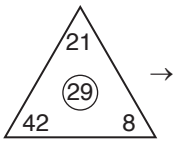
**Cevap: B**

**41.** I.



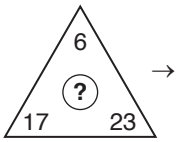

→ 15 + 14 – 26 = 3

II.




→ 42 + 8 – 21 = 29

III.




→ 17 + 23 – 6 = 34

**Cevap: E**

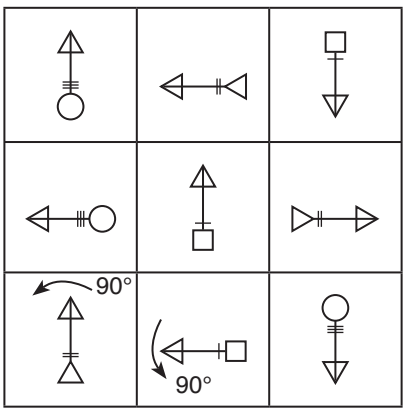
**42.**
- 3.3 + 5 = 14
- 5.B + 3 = 33

  B = 6
- 5.4 + 2 = A = 22

⇒ A – B = 22 – 6 = 16

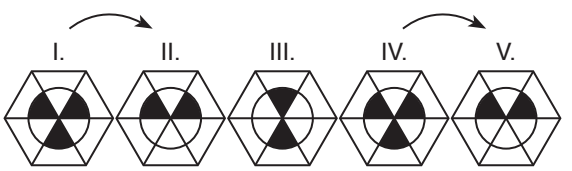
**Cevap: D**

**43.**



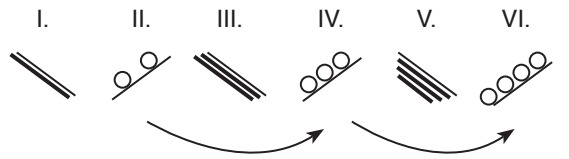

**Cevap: E**

**44.**



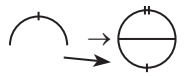

**Cevap: A**

**45.**

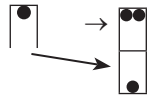



**Cevap: A**

**46.** I.



II.



**Cevap: D**

**47.**

A, B, C ve E şekilleri birbirlerinin döndürülmüş halleri. D farklı.

**Cevap: D**

**48.** z° = 3k

x° = 8k ⇒ 3k + 8k + 4k + 5k

t° = 4k = 20k = 360

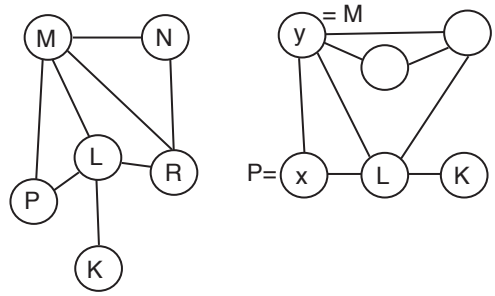
y° = 5k k = 18

⇒ (x + y) – (z + t) = 13k – 7k = 6k

= 6.18 = 108

**Cevap: D**

**49.**




**Cevap: C**





*Diğer Sayfaya Geçiniz.*

**50.** • $a^2 - b^2 = 5$ ve $\boxed{a = 3}$

$9 - b^2 = 5$

$b^2 = 4 \Rightarrow \boxed{b = 2}$

• $\frac{2b}{8} = 4 \Rightarrow \frac{2.2}{8} = 4$

$\Rightarrow \boxed{8 = 1}$

• $c^6 + 1 = 10$

$c + 1 = 10 \Rightarrow \boxed{c = 9}$

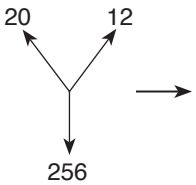
$\Rightarrow K = \frac{a+b}{c+8}$

$= \frac{3+2}{1+9}$

$= \frac{1}{2}$

**Cevap: A**

**51.**

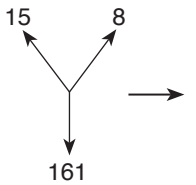



(çatal toplam) x (çatal fark)

(20 + 12) x (20 – 12)

= 32 x 8

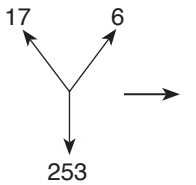
= 256




(15 + 8).(15–8)

= 23 x 7

= 161

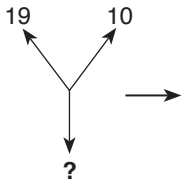



(17 + 6).(17 – 6)

= 23 x 11

= 253

O halde




(19 + 10).(19 – 10)

= 29 x 9 = 261 bulunur.

**Cevap: C**

**52.** 1 , 2 , 5 , 10 , 13 , 26 , 29 , ?

(+8, +16, +32)

$\Rightarrow$ ? = 26 + 32

= 58

**Cevap: D**

**53.** 0 , 3 , 8 , 15 , 24 , ?

+3 +5 +7 +9 +11

? = 24 = 11 = 35

**Cevap: C**

**54.** $\boxed{2^n - 1}$ artış olmakta

2 , 5 , 12 , 27 , 58 , 121 ?

(+3, +7, +15, +31, +63, +127)

$2^2 - 1 = 3$

$2^3 - 1 = 7$

$2^4 - 1 = 15$

o halde $2^7 - 1 = 127$

? = 121 + 127

? = 248

**Cevap: E**

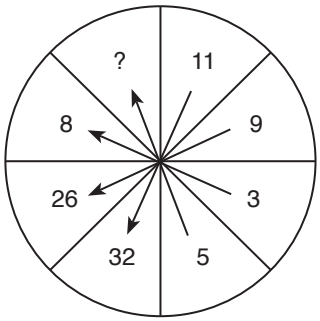
**55.** • AHCEP ≡ 51724

A = 5 , H = 1 , C = 7 , E = 2 , P = 4

• HCEAP = 17254

**Cevap: C**

**56.**




3.3 – 1 = 8

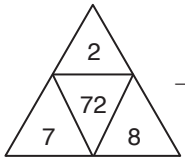
3.11 – 1 = 32

3.9 – 1 = 26

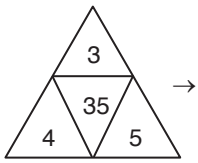
3.5 – 1 = 14 = ?

**Cevap: C**

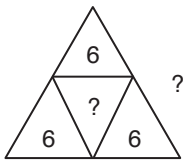
**57.**




→ (2 + 7).8 = 72




→ (3 + 4).5 = 35




? = (6 + 6).6 = 72

**Cevap: E**

**58.**

| 1 | 2 | 3 | 4 | … | 51 |
|---|---|---|---|---|---|
| 1 | 4 | 7 | 10 | … | x |

+3 +3 +3 +3

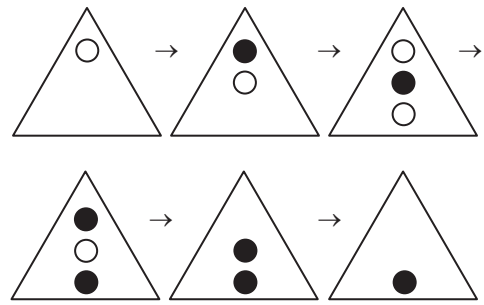
50 tane 3

⇒ x = 1 + 50.3

= 151

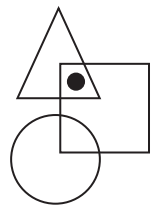
**Cevap: A**

**59.**



**Cevap: B**

**60.**



**Cevap: E**

**61.** E = 57, Ç = 9, V = 2, A = 6, N = 8, K = 1

VANKE → 26817

KABNE → 16387

BAVÇE → 36297

ÖACVE → 46027

LAVÇE → 56297

**Cevap: E**





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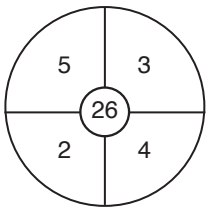
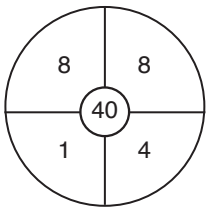
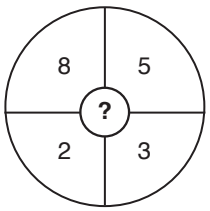
**62.**




→ 5.4 + 3.2 = 26



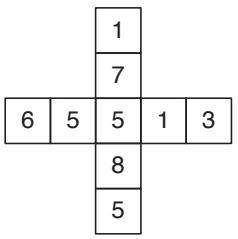

→ 8.4 + 8.1 = 40

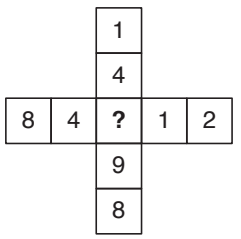



→ 8.3 + 5.2 = 34 olacak

**Cevap: C**

**63.**



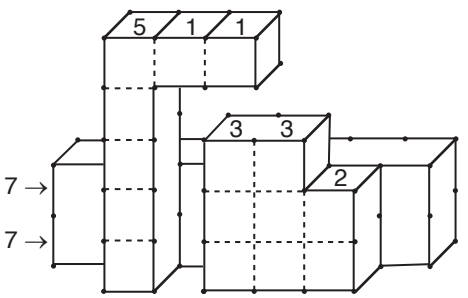

84:? = 12

14.? = 98

⇒ ? = 7

**Cevap: B**

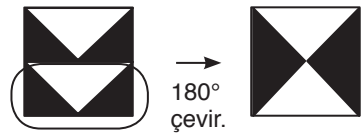
**64.**




7 + 7 + 5 + 1 + 1 + 3 + 3 + 2 = 29

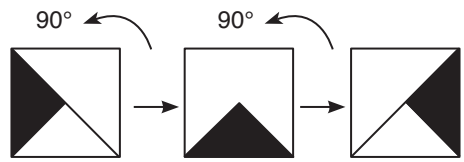
**Cevap: B**

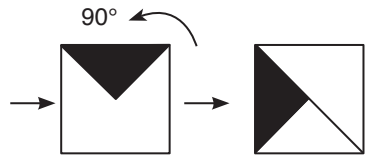
**65.**




**Cevap: C**

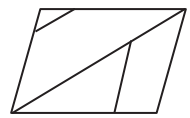
**66.**




**Cevap: B**

**67.**



D seçeneğindeki şekilde çizgi köşeden çıkmıyor.

**Cevap: D**

**68.**

- m + m = 4n

  2m = 4n → m = 2n

  n.n = 9 ⇒ n = 3

  m = 2n = 2.3 = 6
- m.n = 3p

  p = 6

**Cevap: C**

TASARI EĞİTİM YAYINLARI

**69.** • $a + c = 3c$

$a = 2c$

• $a + b = 19$

$-\ b + c = 11$

$a - c = 8$

$2c - c = 8$

$c = 8$

$\Rightarrow a = 2c = 2.8 = 16$

$a + b = 19 \Rightarrow b = 3$

16

$\Rightarrow a - b = 16 - 3 = 13$

**Cevap: D**

**70.** $ABC - CBA = xy4$

$99A - 99C = xy4$

$99(A - c) = xy4$

6

$594 = xy4 \Rightarrow x = 5$

$y = 9$

$x + y = 5 + 9 = 14$

**Cevap: C**

**71.** $537 \triangle 623 = 5.6 + 3.2 - 7.3 = 15$

$731 \triangle 532 = 7.5 + 3.3 - 1.2 = 42$

$643 \triangle 702 = 6.7 + 4.0 - 3.2 = 36$

$923 \triangle 144 = 9.1 + 2.4 - 3.4 = 5$

**Cevap: C**

**72.** A, B, C ve E'de şekil sayıları eşit D'de ise 2 tane ○ ve 3 tane ∈ var ondan farklıdır.

**Cevap: D**

**73.** $\left(23 - \frac{8}{2}\right) \cdot 2 = 38$

$\left(46 - \frac{6}{2}\right) \cdot 2 = 86$

$\left(34 - \frac{10}{2}\right) \cdot 2 = 58$

$\left(42 - \frac{6}{2}\right) \cdot 2 = 78$

**Cevap: E**

**74.** $6:1 = c = 6$

$b:4 = 12 \Rightarrow b = 48$

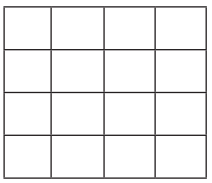
$a:1 = 2 \Rightarrow a = 2$

$\Rightarrow a + b + c = 2 + 48 + 6$

$= 56$

**Cevap: D**

**75.**



4x4

$4 \times 4 + 3 \times 3 + 2 \times 2 + 1 \times 1 = 16 + 9 + 4 + 1$

$= 30$

**Cevap: D**

**76.** $2 = 5 + 4 + 6 = 15$

**Cevap: D**





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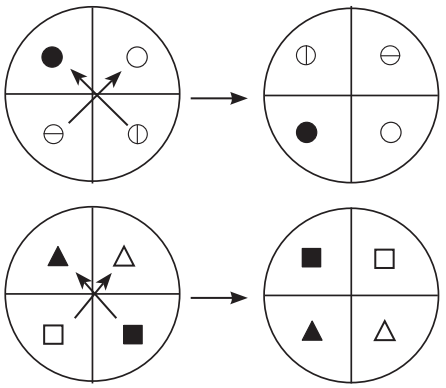
**77.**



**Cevap: B**

**78.**

| | | |
|---|---|---|
| 1 | 4 | 2 |
| 4 | 3 | 9 |

$\rightarrow 43 - 14 = (29)$

| | | |
|---|---|---|
| 3 | 7 | 3 |
| 7 | 5 | 8 |

$\rightarrow 75 - 37 = 38$

| | | |
|---|---|---|
| 4 | **?** | 2 |
| 6 | 8 | 3 |

$\rightarrow 68 - 4? = 23$

$\Rightarrow ?\ 5$

**Cevap: A**

**79.**

| | | |
|---|---|---|
| 13 | 6 | 11 |
| 8 | **?** | 12 |
| 9 | 14 | 7 |

\+

30 30 30

$\Rightarrow 6 + ? + 14 = 30$

$? = 10$

**Cevap: B**

**80.** %100 — 360°

%27 + 27 — ?

$? = 180°$

$\Rightarrow x = 360 - (180 + 144) = 36°$

**Cevap: B**