

ÇÖZÜMLER

$$1. \quad -2^7 \cdot 2^{-6} \cdot -2^2 \cdot -1 \\ -2^{7-6+2} = -2^3 \\ = -8$$

$$2. \quad 0,5 - \frac{1}{1 - \frac{1}{0,5}} = 0,5 - \frac{1}{1 - \frac{10}{5}} \\ = \frac{5}{10} - \frac{1}{1-2} = \frac{5}{10} + 1 = \frac{15}{10} \\ = 1,5$$

$$3. \quad 96 \cdot x = y^3 \\ 2^5 \cdot 3 \cdot x = y^3 \\ 2^3 \cdot 2^2 \cdot 3 \cdot x = y^3 \\ \begin{matrix} \swarrow & \searrow \\ 2^1 & 3^2 \end{matrix} \Rightarrow x = 2 \cdot 9 = 18 \\ \Rightarrow 2^3 \cdot 2^2 \cdot 3 \cdot 2 \cdot 3^2 = y^3 \\ 2^3 \cdot 2^3 \cdot 3^3 = y^3 \\ 12^3 = y^3 \Rightarrow y = 12 \\ \Rightarrow 18 + 12 = 30$$

$$4. \quad \frac{1 - \frac{1}{2}}{1 - \frac{1}{\frac{b-a}{b}}} = \frac{\frac{2-1}{2}}{1 - \frac{b}{b-a}} = \frac{\frac{1}{2}}{\frac{b-a-b}{b-a}} \\ = \frac{1}{2} \cdot \frac{b-a}{-a} = \frac{a-b}{2a}$$

$$5. \quad 3x + 6 < 10 \leq 12 - 2x \\ \begin{matrix} \swarrow & \searrow \\ 3x + 6 < 10 & 10 \leq 12 - 2x \\ 3x < 4 & 2x \leq 2 \\ x < \frac{4}{3} & x \leq 1 \\ \Rightarrow x \leq 1 \end{matrix}$$

Cevap: E

Cevap: C

$$6. \quad \begin{matrix} a - b > 6 \\ + & b + c > 12 \\ \hline a + c > 18 \\ \downarrow \\ 19 \end{matrix} \\ \Rightarrow a + c + d = 33 \\ 19 + d = 33 \Rightarrow d = 14$$

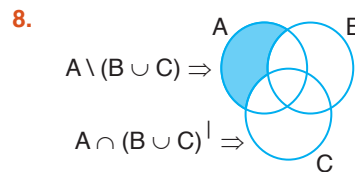
Cevap: D

Cevap: A

$$7. \quad \begin{matrix} \frac{a \cdot b}{c} = 2 & \frac{a \cdot b}{c} \cdot \frac{b \cdot c}{a} = 6 \\ \frac{a \cdot b}{c} \cdot \frac{a \cdot c}{b} = 10 & \frac{b \cdot c}{a} = 3 & \frac{b \cdot c}{a} \cdot \frac{a \cdot c}{b} = 15 \\ a^2 = 10 & \frac{a \cdot c}{b} = 5 & \frac{a \cdot c}{b} \cdot \frac{a \cdot b}{c} = 15 \\ & & c^2 = 15 \end{matrix} \\ \Rightarrow a^2 + b^2 + c^2 = 10 + 6 + 15 \\ = 31$$

Cevap: D

Cevap: C



Cevap: B

Cevap: B

$$9. \left(\sqrt{\frac{16}{10}} + \sqrt{\frac{121}{10}} \right) \cdot \sqrt{10}$$

$$\left(\frac{4}{\sqrt{10}} + \frac{11}{\sqrt{10}} \right) \cdot \sqrt{10}$$

$$\frac{15}{\sqrt{10}} \cdot \sqrt{10} = 15$$

Cevap: A

$$10. \frac{(3^x)^3 - 1^3}{(3^x)^2 - 1^2} \cdot \frac{3^x + 1}{a^x + 3^x + 1}$$

$$\frac{(3^x - 1)(9^x + 3^x + 1)}{(3^x - 1)(3^x + 1)} \cdot \frac{3^x + 1}{9^x + 3^x + 1} = 1$$

Cevap: C

$$11. (-4)^{2x} \cdot (-4)^3 = 4^{2x} \cdot -2^6$$

$$= 2^{4x} \cdot -2^6 = (2^x)^4 \cdot -2^6$$

$$= (-p)^4 \cdot -2^6 = -2^6 \cdot p^4$$

Cevap: B

$$12. \left(\sqrt{\left| \frac{-7}{3} \right|^2} - \sqrt{\left| \frac{-5}{3} \right|^2} \right)^{\frac{1}{2}}$$

$$\left(\left| -\frac{7}{3} \right| + \frac{5}{3} \right)^{\frac{1}{2}}$$

$$\left(\frac{7}{3} + \frac{5}{3} \right)^{\frac{1}{2}}$$

$$\left(\frac{12}{3} \right)^{\frac{1}{2}}$$

$$4^{\frac{1}{2}} = 2$$

Cevap: D

$$13. \underbrace{|x-y|}_{-} - \underbrace{|y-z|}_{-} - \underbrace{|x-z|}_{-}$$

$$-x + y + y - z + x - z$$

$$2y - 2z$$

Cevap: B

$$14. \left(\frac{12}{3} \right) (x^2)^9 \left(\frac{1}{x} \right)^3$$

$$= \left(\frac{12}{3} \right) \cdot x^{18} \cdot \frac{1}{x^3} = \left(\frac{12}{5} \right) x^{15}$$

$$\Rightarrow k = \left(\frac{12}{3} \right) = \frac{12 \cdot 11 \cdot 10}{3 \cdot 2 \cdot 1}$$

$$= 220$$

Cevap: C

$$15. x_1 = m \quad \text{ve} \quad x_2 = n$$

$$\Rightarrow x_1 \cdot x_2 = m \cdot n = 4n \Rightarrow m = 4$$

$$\Rightarrow x_1 = 4 \quad \text{için} \quad 4^2 + (1 - 2n) \cdot 4 + 4n = 0$$

$$16 + 4 - 8n + 4n = 0$$

$$20 = 4n$$

$$n = 5$$

$$\Rightarrow m + n = 4 + 5 = 9$$

Cevap: E

$$16. f(2) = 0$$

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

$$f(0) = 3$$

$$\Rightarrow \frac{f(2) + f^{-1}(2)}{f(0)} = \frac{0 + 1}{3}$$

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

Cevap: A

$$17. f^{-1}(x) = \frac{x+1}{1} = 2x + 2$$

$$\Rightarrow 2(x+6) + 2 - 2(x+6) = \frac{1}{2}x - 1 + 6$$

$$2(a+6) + 2 - 2(a+6) = \frac{1}{2}a + 5$$

$$2a + 12 + 2 - 2a - 12 = \frac{1}{2}a + 5$$

$$2 = \frac{1}{2}a + 5 \Rightarrow \frac{a}{2} = -3$$

$$a = -6$$

Cevap: C

$$18. \frac{9! - 2 \cdot 8!}{7! + 6! + 5!}$$

$$= \frac{8!(9-2)}{5!(7 \cdot 6 + 6 + 1)}$$

$$= \frac{5! \cdot 6 \cdot 7 \cdot 8(7)}{5! \cdot 49} = 48 \text{ bulunur.}$$

Cevap: C

$$19. \begin{array}{r} A B C \\ - C B A \\ \hline 3 X Y \end{array}$$

$$ABC - CBA = 3XY$$

$$100A + 10B + C - 100C - 10B - A = 300 + 10X + Y$$

$$99(A - C) = 300 + 10X + Y$$

$$396 = 300 + 10X + Y$$

$$96 = 10X + Y$$

$$\begin{array}{cc} \downarrow & \downarrow \\ 9 & 6 \end{array}$$

O halde

$$X + Y = 9 + 6 = 15 \text{ bulunur.}$$

Cevap: B

$$20. \bullet \frac{b}{2} = 2c \Rightarrow b = 4c$$

$$\downarrow$$

$$4\text{'ün katı}$$

$$3a + 5b = 91$$

$$\begin{array}{cc} \downarrow & \downarrow \\ 17 & 8 \end{array}$$

Cevap: D

$$21. \frac{a.d.e}{b.c.f} = \frac{a}{b} \cdot \frac{d}{c} \cdot \frac{e}{f}$$

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

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

Cevap: C

$$22. x = 4 \Rightarrow \frac{P(4-3)}{Q(4+1)} = 4^2 - 3 \cdot 4 + 1$$

$$\frac{P(1)}{Q(5)} = 16 - 12 + 1$$

$$\frac{P(1)}{Q(5)} = 5$$

$$\frac{P(1)}{2} = 5$$

$$P(1) = 10$$

Cevap: A

$$23. P(x) = C(x) \cdot (x-2)(x-3) + ax + b$$

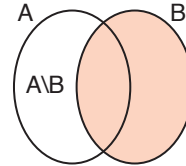
$$x = 2 \rightarrow -/ \quad 2a + b = 1 \rightarrow 4 + b = 1$$

$$x = 3 \rightarrow + \quad 3a + b = 3 \quad \boxed{b = -3}$$

$$\boxed{a = 2} \Rightarrow 2x - 3 = ax + b$$

Cevap: D

24.



$$s(B) = 5 \cdot s(A \setminus B) \text{ olduğundan}$$

$$s(A \setminus B) = x \text{ ise } s(B) = 5x \text{ olur.}$$

$$s(A \cup B) = 3 \cdot s(A \setminus B) + 15$$

$$s(A \cup B) = 3x + 15 \text{ tir.}$$

$$A \cup B \text{ kümesinin eleman sayısı } s(B) + s(A \setminus B) = 5x + x = 6x$$

$$6x = 3x + 15$$

$$3x = 15 \Rightarrow x = 5$$

$$B \text{ kümesinin eleman sayısı } s(B) = 5x = 5 \cdot 5$$

$$= 25 \text{ bulunur.}$$

Cevap: D

25. $|a| = b + 3$ ise

$a = b + 3$ veya $a = -b - 3$ olmalıdır.

Bu iki durumu diğer eşitlikte yerine yazalım

$a = b + 3$ için $|a - b| = b + 9$

$$|b + 3 - b| = b + 9$$

$$3 = b + 9 \Rightarrow b = -6 \text{ olup}$$

bu değer $|a| = b + 3$ eşitliğinde yazıldığında

$$|a| = -3 \text{ olamaz.}$$

• $a = -b - 3$ için

$$|-b - 3 - b| = b + 9$$

$$-2b - 3 = b + 9$$

$$-12 = 3b$$

$$-4 = b$$

(sağlamaz)

$b = 6$ için

• $|a| = b + 3 \Rightarrow |a| = 6 + 3 = 9$

$a = 9$ veya $a = -9$

$a = 9$ için $|a - b| = b + 9$ $a = -9$

$b = 6$ $|9 - 6| = 6 + 9$ $b = 6$ için sağlar.

$$3 \neq 15$$

O halde

$$a \cdot b = -9 \cdot 6 = -54$$

bulunur.

Cevap: A

26. $a - a = 7 \Rightarrow \frac{a^2 - \sqrt{a} + a - a\sqrt{a}}{a + 1}$

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

$$= \frac{(a + 1) \cdot (a - \sqrt{a})}{a + 1}$$

$$= a - \sqrt{a} = 7$$

Cevap: B

28. $\frac{a}{3a + 2b} \times \frac{b}{2a + 3b} = x$

$$2a^2 + 3ab = 3ab + 2b^2$$

$$a^2 - b^2 = 0 \rightarrow (a - b) \cdot (a + b) = 0 \rightarrow a - b = 0$$

sıfır olmalı \downarrow Sıfırdan farklı verilmiş. $a = b$

O halde; $\frac{a}{3a + 2b} = x \rightarrow x = \frac{1}{5}$

\downarrow
a

Cevap: D

Cevap: A

29. $\triangle x = \underbrace{x + x + \dots + x}_{x \text{ tane}} = x \cdot x = x^2$

$\triangle y = \underbrace{y + y + \dots + y}_{y \text{ tane}} = y \cdot y = y^2$

$\triangle y = \underbrace{x + x + \dots + x}_{y \text{ tane}} = x \cdot y$

$\triangle x = \underbrace{y + y + \dots + y}_{x \text{ tane}} = x \cdot y$

O halde

$x^2 + x \cdot y + x \cdot y + y^2 = \triangle 4 = 64 = 64 + 64 + 64 + 64$

$x^2 + 2xy + y^2 = 256$

$(x + y)^2 = 16^2$

$x + y = 16$

$\triangle 1 + \triangle 1 = x + y = 16$ olur.

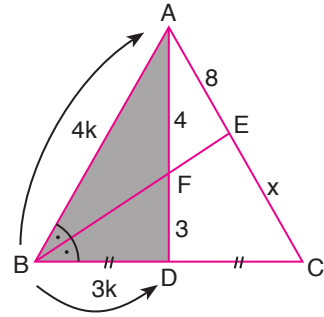
Cevap: D

30. $n = 1 \rightarrow a_1 = 1 \cdot a_1$
 $n = 2 \rightarrow a_2 = 2 \cdot a_1$
 $n = 3 \rightarrow a_3 = 3 \cdot a_1$
 \vdots

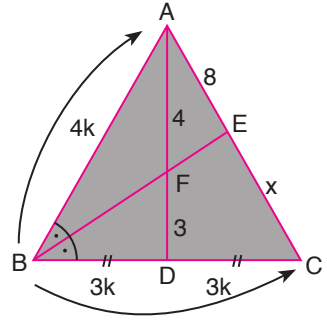
$n = 19 \rightarrow a_{20} = 19 \cdot a_1$
 $\frac{a_{20}}{x} = 1.2.3 \dots 19 \cdot a_1$
 $a_{20} = 19! \cdot k$

Cevap: B

31. ABD üçgeninde açıortay teoremi uygulandığında aşağıdaki gibi kenar oranları elde edilir.



ABC üçgeninde açıortay teoremi uygulanırsa;

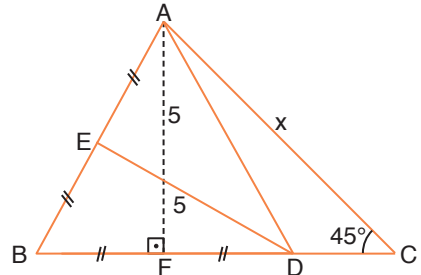


$\frac{4k}{6k} = \frac{8}{x}$

$x = 12$

Cevap: A

32.



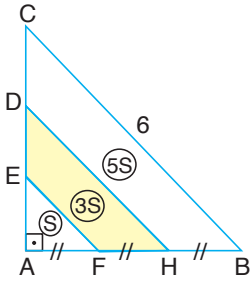
ABD eşkenar üçgen ve $|AE| = |EB|$ ise
 $|ED| = |AF| = 5$ br olur.

AFC ikizkenar dik üçgeninde,

$|AF| = 5$ br ise $|AC| = x = 5\sqrt{2}$ br olur.

Cevap: B

33.



• $|CB| = 6 \text{ br}$ ise $|AB| = |AC| = \frac{6}{\sqrt{2}} = 3\sqrt{2} \text{ br}$

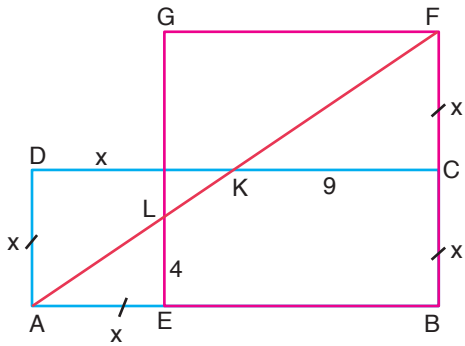
• $A(CAB) = 9S = \frac{3\sqrt{2} \cdot 3\sqrt{2}}{2} = 9$

$S = 1 \text{ br}^2$

O halde $A(DEFH) = 3S = 3 \text{ br}^2$ olur.

Cevap: D

34.



$\widehat{KFC} \sim \widehat{AFB}$ olduğundan

$\frac{9}{|AB|} = \frac{x}{2x} \Rightarrow |AB| = 18 \text{ br}$ bulunur.

$\widehat{EAL} \sim \widehat{BAF}$ olduğundan

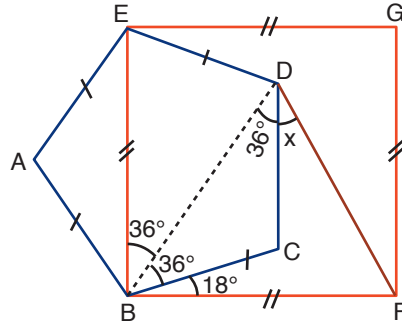
$\frac{4}{2x} = \frac{x}{18} \Rightarrow x^2 = 36$

$x = 6 \text{ br}$

$A(ABCD) = |AB| \cdot |AD| = 18 \cdot 6 = 108 \text{ br}^2$ dir.

Cevap: C

35.



Düzensün beşgenin bir iç açısı 108° dir.

$180^\circ - 108^\circ = 72^\circ$

$\frac{72}{2} = 36^\circ = m(\widehat{AEB}) = m(\widehat{ABE})$

$|BD| = |DE|$ olur. $m(\widehat{BDC}) = m(\widehat{DFB})$

$36 + x + 36 + x + 54 = 180$

$2x = 180 - 126$

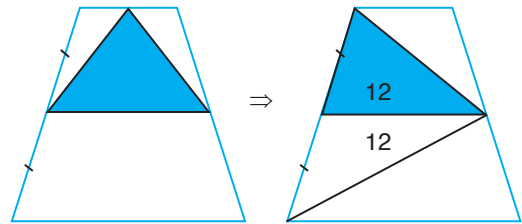
$2x = 54$

$x = 27$ bulunur.

Cevap: B

TASARI EĞİTİM YAYINLARI

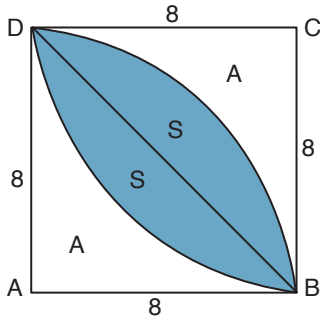
36.



$\Rightarrow A(ABCD) = 24 \cdot 2 = 48$

Cevap: B

37.



$$2A + 2S = 64$$

$$I. \quad A + S = 32$$

$$II. \quad A + 2S = 16\pi \quad A + 2S = \pi \cdot (8)^2 \cdot \frac{90^\circ}{360^\circ}$$

I. ve II.'den ortak çözüm yapılarak

$$A + 2S = 16\pi$$

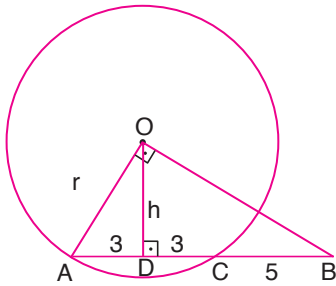
$$+ \quad -(A + S = 32)$$

$$S = 16\pi - 32 = 16(\pi - 2)$$

$$2.S = 32(\pi - 2)$$

Cevap: E

38.



• $OD \perp AC$ çizilirse $|AD| = |DC| = 3$ br olur.

• AOB üçgeninde öklid uygulanırsa,

$$h^2 = 3 \cdot 6 \Rightarrow h = 2\sqrt{6}$$

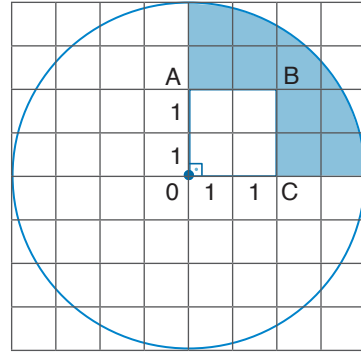
• ODA dik üçgeninde pisagor uygulanırsa,

$$r^2 = h^2 + 3^2$$

$$r^2 = 24 + 9 \Rightarrow r = \sqrt{33} \text{ br}$$

Cevap: A

39.



Taralı alan = (Çeyrek daire alanı) - (OABC karesinin alanı)

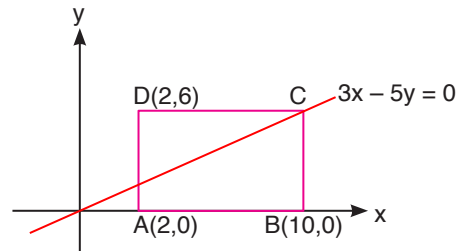
$$= \frac{90}{360} \pi \cdot 4^2 - 2 \cdot 2$$

$$= \frac{1}{4} \pi \cdot 16 - 4$$

$$= 4\pi - 4 \text{ br}^2 \text{ olur.}$$

Cevap: B

40.



• D(2,6) ise A(2,0) ve C(a,6) olur.

• C noktası $3x - 5y = 0$ doğrusu üzerinde olduğundan nokta doğruyu sağlar.

$$3a - 5 \cdot 6 = 0, \quad 3a = 30 \text{ ve } a = 10$$

• C(10,6) ise B(10,0) olur.

• $A(ABCD) = |AB| \cdot |BC| = (10 - 2) \cdot 6 = 48 \text{ br}^2$ olur.

Cevap: D

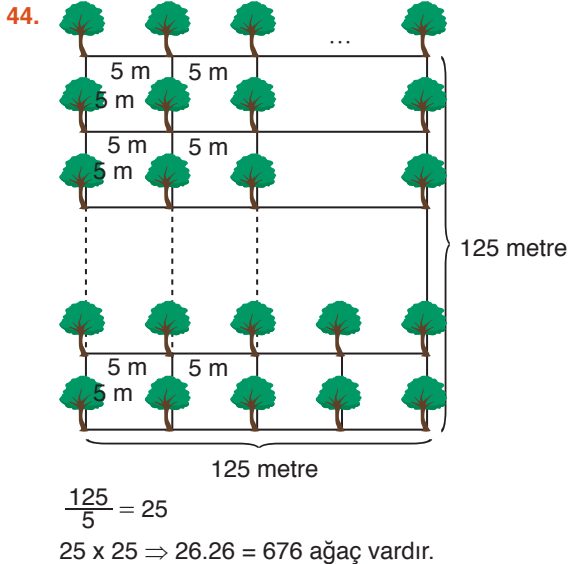
41. $2, 6, 3, 12, 8, 40, 35, x, y$
 $\begin{matrix} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ .3 & -3 & .4 & -4 & .5 & -5 & .6 & -6 \end{matrix}$
 $x = 6.35 = 210$
 $y = 210 - 6 = 204$
 $\Rightarrow x + y = 414$

Cevap: C

42. $1^3 - 1 = 0$
 $2^3 - 1 = 7$
 $3^3 - 1 = 26$
 $4^3 - 1 = 63$
 \vdots
 $20^3 - 1 = 7999$

43. $1 \triangle 3 = (1 - 3) \star (1 + 3)$
 $= -2 \star 4$
 $\Rightarrow -2 \star 4 = (-2)^2 - (-2).4$
 $= 4 + 8$
 $= 12$

Cevap: C



Cevap: C

45. $\square \otimes \triangle \square \nabla \equiv \$ \bullet \star = 036098721$


Cevap: B

46. $\begin{matrix} d & b & e & b & a & & 1 & 2 & 4 & 2 & 3 \\ b & d & a & b & a & & 2 & 1 & 3 & 2 & 3 \\ d & e & c & a & e & & 1 & 4 & 5 & 3 & 4 \\ c & e & a & b & e & & 5 & 4 & 3 & 2 & 4 \\ c & b & a & e & a & & 5 & 2 & 3 & 4 & 3 \end{matrix}$
 $a = 3$
 $e = 4$
 $d e c a e \quad \underline{1} \quad \underline{4} \quad \underline{5} \quad \underline{3} \quad 4$


Cevap: C


47.  $\rightarrow \begin{matrix} 13.13 \\ + 13.13 \\ \hline 2.26 \end{matrix}$

Cevap: C

 $\rightarrow \begin{matrix} 2.26 \\ + 2.26 \\ \hline 4.52 \end{matrix}$

Cevap: D

 $\rightarrow \begin{matrix} 4.52 \\ + 4.52 \\ \hline 9.44 \end{matrix}$

 $\rightarrow \begin{matrix} 9.44 \\ + 9.44 \\ \hline 19.28 \end{matrix}$

Cevap: E

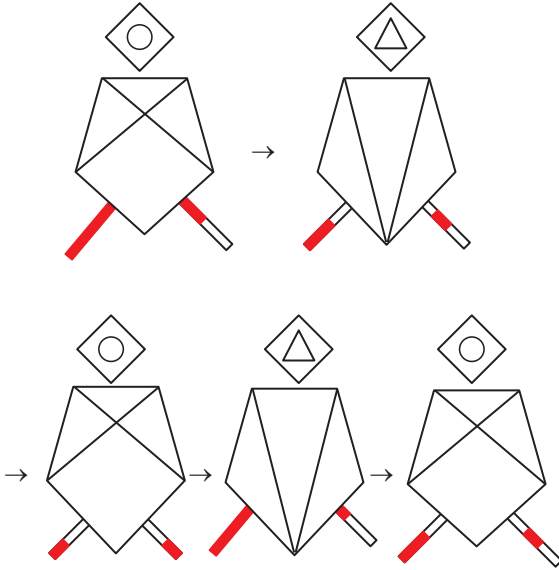
48.

\star	a	b	c	d	e
a	(d)	e	a	(b)	c
b	e	a	b	c	d
c	a	b	c	d	e
d	b	c	d	e	a
e	c	d	e	a	b

$a \star (a \star (a \star a)) = a \star (a \star d) = a \star b = e$

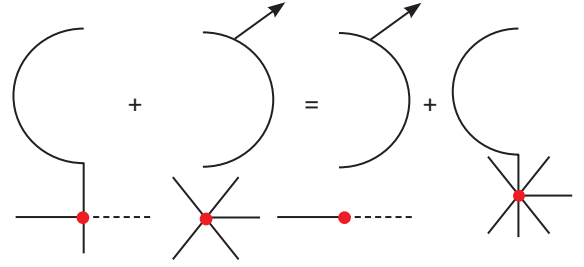
Cevap: E

49.



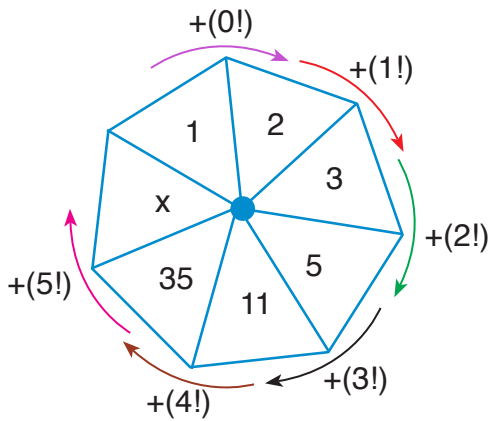
Cevap: A

51.



Cevap: D

50.

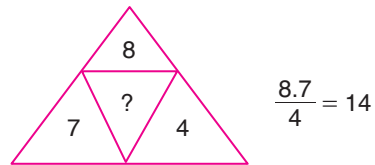
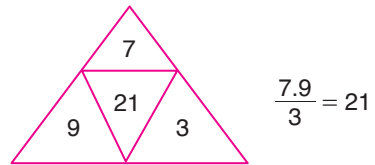
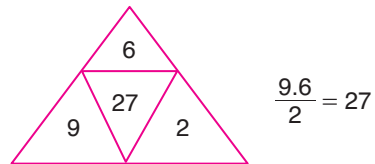


$$x = 35 + 5!$$

$$= 35 + 120 = 155$$

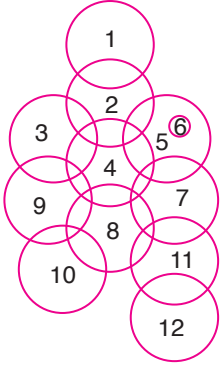
Cevap: D

52.



Cevap: A

59.



Cevap: C

60.

$$1.3 + 1 = 4$$

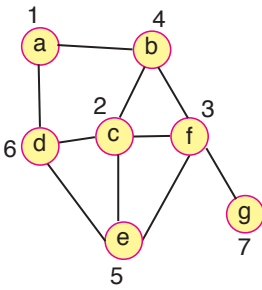
$$3.3 + 1 = 10$$

$$3.a + 1 = 25 \Rightarrow a = 8$$

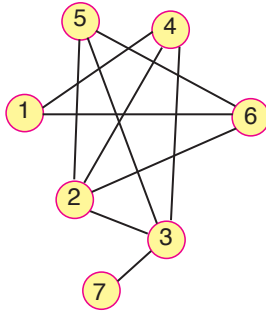
$$3.11 + 1 = 34$$

Cevap: C

61.

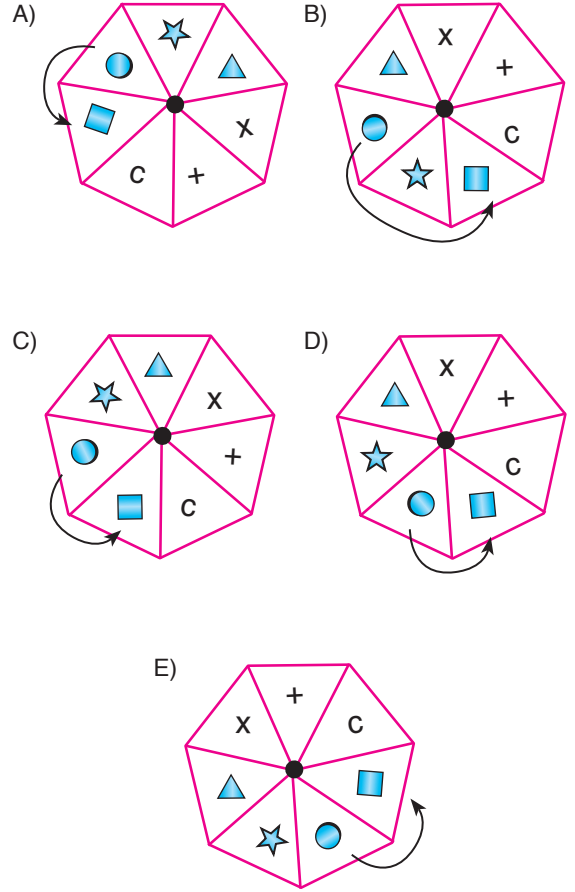


$$b = 4 \quad e = 5$$



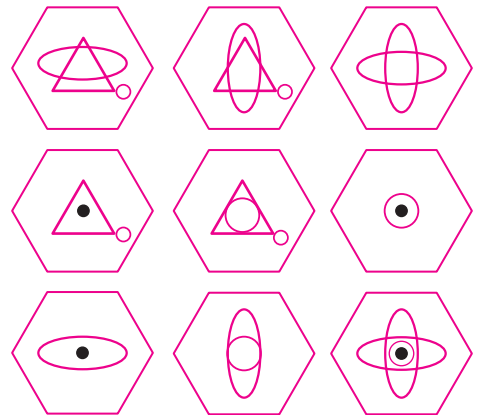
Cevap: B

62. Aşağıdakilerden hangisi farklıdır?



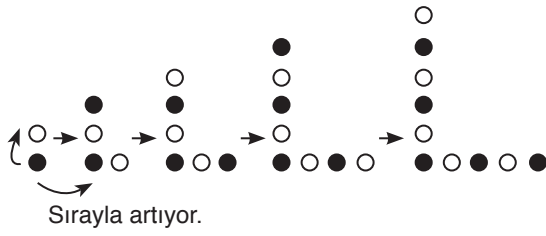
Cevap: B

63. Üst üste konulunca çakışmayanlar alınıyor.



Cevap: E

64.



Cevap: D

65. **BİR** → 3 harfli
DÖRT → 4 harfli
SEKİZ → 5 harfli
ON ÜÇ → 4 harfli
ON YEDİ → 6 harfli

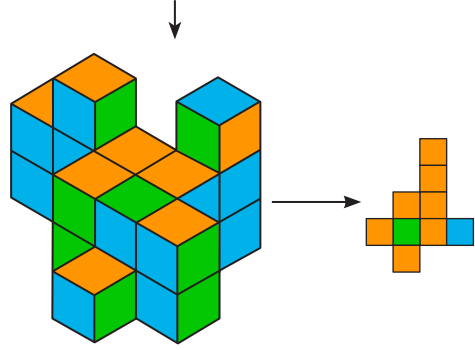
$1 + 3 = 4$ (**DÖRT**)
 $4 + 4 = 8$ (**SEKİZ**)
 $8 + 5 = 13$ (**ON ÜÇ**)
 $13 + 4 = 17$ (**ON YEDİ**)
 $17 + 6 = 23$ (**YİRMİ ÜÇ**)

Cevap: D

66. $72 \xrightarrow{(16\ 8)} 96$
 $7 + 9 \quad 2 + 6$
 $\Rightarrow 94 \xrightarrow{(16\ 11)} 77$
 $9 + 7 \quad 4 + 7$

Cevap: A

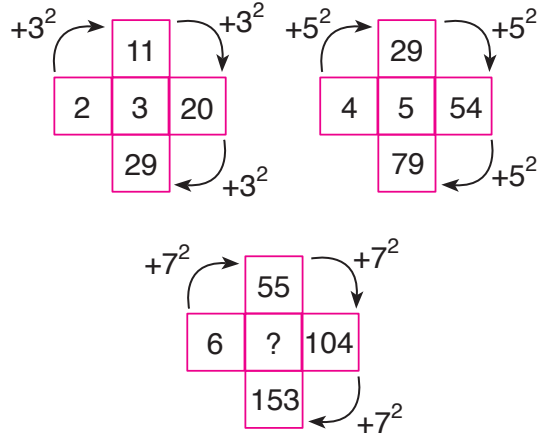
67.



Cevap: A

TASARI EĞİTİM YAYINLARI

68.



Cevap: A

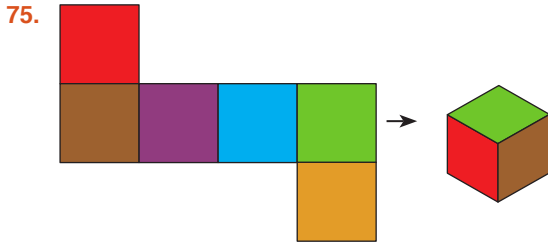
69. $\text{Red Circle} + \text{Red Circle} + \text{Red Circle} + \text{Red Circle} = 24 \Rightarrow \text{Red Circle} = 6$

$\text{Red Circle} + \text{Blue Triangle} + \text{Blue Triangle} + \text{Blue Triangle} = 18 \Rightarrow \text{Blue Triangle} = 4$

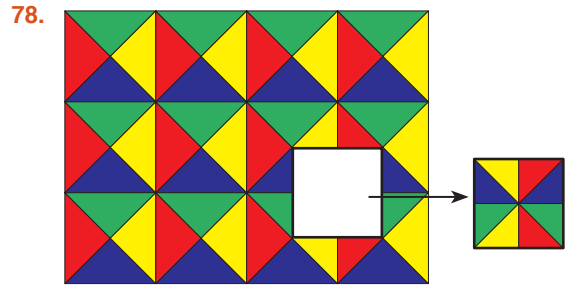
$\text{Blue Triangle} + \text{Purple House} + \text{Purple House} + \text{Purple House} = 6 \Rightarrow \text{Purple House} = 7$

$\Rightarrow \text{Blue Triangle} \cdot \text{Red Circle} \cdot \text{Purple House} = 4 \cdot 6 \cdot 7 = 168$

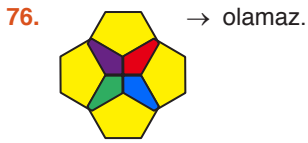
Cevap: E



Cevap: C



Cevap: A

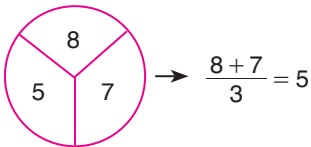


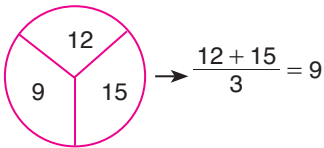
Cevap: B

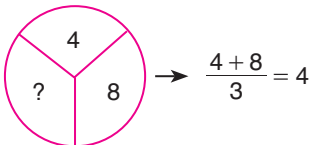
TASARI EĞİTİM YAYINLARI

79.
$$\begin{array}{r} m \cdot m = p + 20 \\ - \quad n \cdot n = p - 8 \\ \hline m^2 - n^2 = 28 \\ (m - n)(m + n) = 28 \\ \begin{array}{l} 2 \quad 14 \\ \Rightarrow \quad m + n = 14 \\ + \quad m - n = 2 \\ \hline 2m = 16 \Rightarrow m = 8 \end{array} \end{array}$$
 $m + n = 14$

Cevap: E

77. 





Cevap: C

80.

6	-	2	= 4
+		x	
9	/	3	= 3

 $\frac{6}{15} = \frac{2}{6}$

$a = 6, b = 2, c = 9, d = 3$
 $\Rightarrow a \cdot d - b \cdot c = 6 \cdot 3 - 2 \cdot 9 = 0$

Cevap: B