

ÇÖZÜMLER

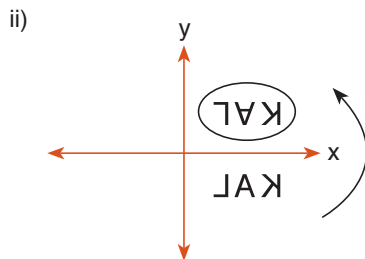
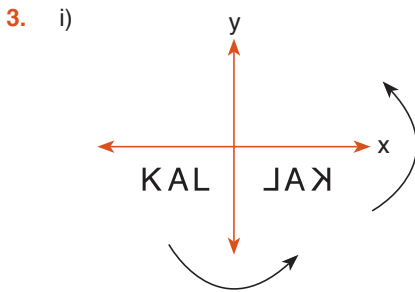
1. i) $10 + 5 = 15$
 $10 - 5 = 5$ $\rightarrow$ $15.5 = 75$

iii) $5 + 4 = 9$
 $5 - 4 = 1$ $\rightarrow$ $9.1 = 9$

ii) $9 + 1 = 10$
 $9 - 1 = 8$ $\rightarrow$ $10.8 = 80$

iv) $7 + 2 = 9$
 $7 - 2 = 5$ $\rightarrow$ $9.5 = 45$

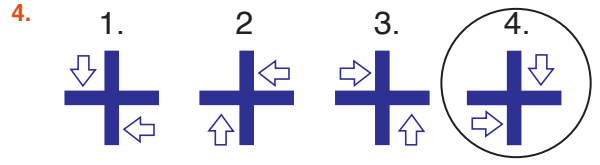
2. $4^1 = 4$
 $4^2 = 4 \omega 4 = 5$
 $4^3 = 5 \omega 4 = 3$
 $4^4 = 3 \omega 4 = 4$
 $4^5 = 4 \omega 4 = 5$
 $4^{41} = (4^4)^{10} \omega 4 = 4 \omega 4 = 5$



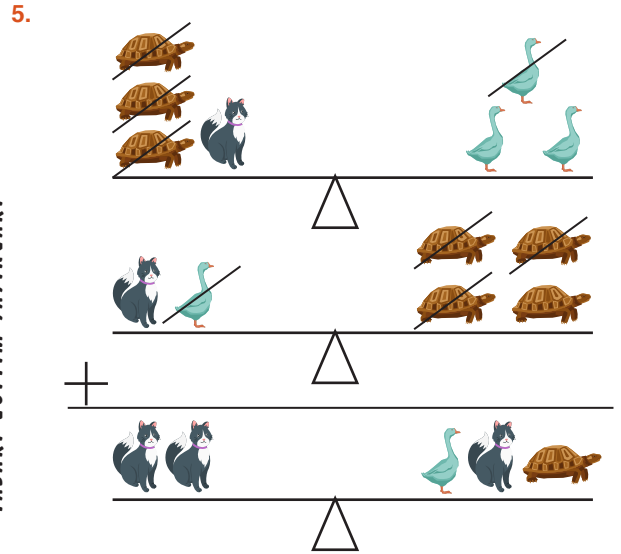
Cevap: A

Cevap: C

Cevap: C



Cevap: C

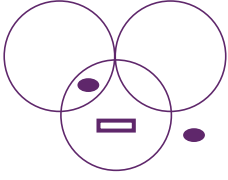


Cevap: C



Cevap: D

7.



Cevap: E

8. $35624 \Rightarrow 96482$
 $72653 \Rightarrow 78469$
 $65372 \Rightarrow 46978$
 $42356 \Rightarrow 28964$
 $53427 \Rightarrow 69287$

- $2 \Rightarrow \textcircled{8}$
 $3 \Rightarrow \textcircled{9}$
 $4 \Rightarrow \textcircled{2}$
 $5 \Rightarrow \textcircled{6}$
 $6 \Rightarrow \textcircled{4}$
 $7 \Rightarrow \textcircled{7}$
 $8 \Rightarrow \textcircled{2}$
 $9 \Rightarrow \textcircled{3}$

O halde sayımız

 $549723 \Rightarrow \boxed{623789}$

9. Önce $\textcircled{\bullet}$ yapılır.
 TMXRCK, sonra $\triangle$ yapılır.
 KMCRXT olur.

Cevap: C

10. $x \otimes y = x + 3y$
 $x \odot y = x \cdot y$
 $(5 \otimes 1) \odot (1 \otimes 1)$
 $(5 + 3 \cdot 1) \odot (1 + 3 \cdot 1) = 8 \odot 4 = 8 \cdot 4$
 $= 32$

Cevap: B

11.

$$\begin{array}{r} 2x - y + 4z = 33 \\ -2/ \quad 3z + 2x + y = 24 \\ \hline 4y + 3z + 3x = 28 \\ 2x - y + 4z = 33 \\ \hline -6z - 4x - 2y = -48 \\ + \quad 4y + 3z + 3x = 28 \\ \hline x + y + z = 13 \end{array}$$

Cevap: E

12. $a + b = 10$

$$\begin{array}{l} a \cdot c = 36, \quad b \cdot c = 54 \\ c(a + b) = 90 \\ \underbrace{\quad}_{10} \\ \boxed{c = 9} \\ a = 4 \quad \text{ve} \quad b = 6 \end{array}$$

Cevap: E

13.

$$\begin{array}{l} \begin{array}{|c|c|} \hline 7 & 2 \\ \hline \end{array} \rightarrow \begin{array}{|c|} \hline 7 \\ \hline \end{array} = 7^2 \\ \begin{array}{|c|c|} \hline 4 & 4 \\ \hline \end{array} \rightarrow \begin{array}{|c|} \hline 4 \\ \hline \end{array} = 4^3 \\ \begin{array}{|c|c|} \hline 2 & 2 \\ \hline \end{array} \rightarrow \begin{array}{|c|} \hline 2 \\ \hline \end{array} = 2^4 \\ 7^2 + 4^2 + 2^4 = 129 \end{array}$$

Cevap: D

14.

$$\begin{array}{l} \triangle 2 + \square 1 = 3 \cdot 2 + 4 \cdot 1 = 10 \\ \hexagon 5 + \pentagon 4 = 6 \cdot 5 + 5 \cdot 4 = 50 \\ \heptagon 3 + \octagon 4 = 7 \cdot 3 + 8 \cdot 4 = 21 + 32 = 53 \end{array}$$

Cevap: D

15.

I

Kenar değerleri topla

Kenar bağıntısına böl

$$\frac{8+3+7+2}{4} = \boxed{5}$$

II

$$\frac{6+4+7+8+5}{5} = \boxed{6}$$

III

$$\frac{9+7+8+9+7+8}{6} = \boxed{8}$$

Cevap: A

16. $8 \text{ kg} \cdot 4 \text{ br} + 3 \text{ kg} \cdot 7 \text{ br} = 15 \text{ kg} \cdot 3 \text{ br} + ? \cdot 2 \text{ br}$

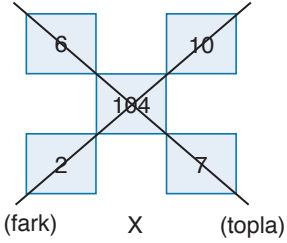
$$32 + 21 = 45 + 2 \cdot ?$$

$$53 = 45 + 2 \cdot ?$$

$$\Rightarrow ? = 4 \text{ kg}$$

Cevap: B

17.



$$(10 - 2) \times (6 + 7) = 140$$

$$(10 - 2) \times (17 + 5) = 8.22 = 176$$

Cevap: C

18. Son satırı



Cevap: E

19. Eksik olan parça A'dır.

Cevap: A

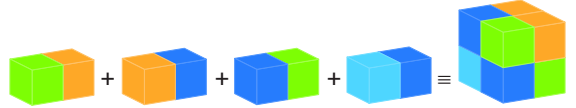
20. $\sim$ → saat yönünde 1 kenar ilerliyor.

● → Saat yönünde 2 köşe ilerliyor.

< → Saat yönünün tersi 1 köşe ilerliyor.

Cevap: C

21.



Cevap: C

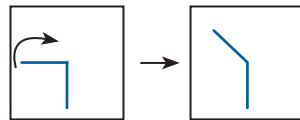
22.

(Mavilerin kenar sayısının toplamının 2 katı) — (Beyazların kenar sayıları toplamı)

$$2.6 - (3 + 4) = 12 - 7 = 5$$

Cevap: C

23.

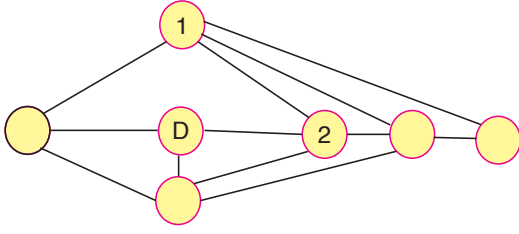


olmalı.

45° yükseliyor her defasında.

Cevap: D

24.

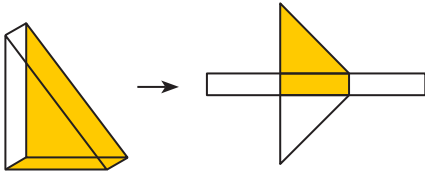


1 → F

2 → B

Cevap: B

25.



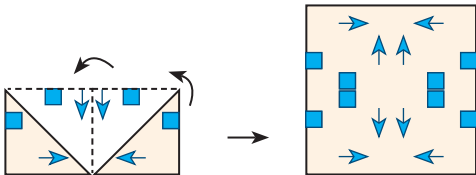
Cevap: B

26. Çember dışındaki ● ifadelerin farkı çember içine ya da dışına yazılıyor. İçteki daireler fazla ise içe, dıştakiler fazla ise dışa yazılıyor.



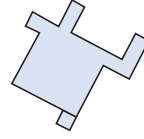
Cevap: B

27.



Cevap: C

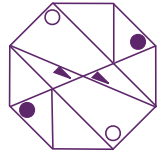
28. E seçeneği verilen şekille özdeşdir.



Cevap: E

$$29. \frac{360}{8} = 45 \rightarrow \text{dış açısı}$$

$$\frac{225}{45} = 5 \text{ defa dönmeli}$$



Cevap: E

$$30. \text{Dikey kibrit sayısı} \quad 7 \cdot 3 = 21$$

$$\text{Yatay kibrit sayısı} \quad + \quad 6 \cdot 4 = 24$$

45 tane yapar.

Cevap: D

31.



ifadesi

olarak 4 tane yan yana koyuyor.

Bundan da 4 tane yan yana koyarsak A olur.

Cevap: A

$$\left. \begin{array}{l} 2 \times 2'lik \rightarrow 6 \\ 3 \times 3'lük \rightarrow 1 \\ 1 \times 1'lik \rightarrow 15 \end{array} \right\} 22$$

Cevap: C

33. Küpü kapatırsak

$$6 \rightarrow 1$$

$$3 \rightarrow 2$$

$$5 \rightarrow 4 \quad \text{karşılıklı gelen yüzler bunlar olmalı.}$$

Şıklar incelendiğinde

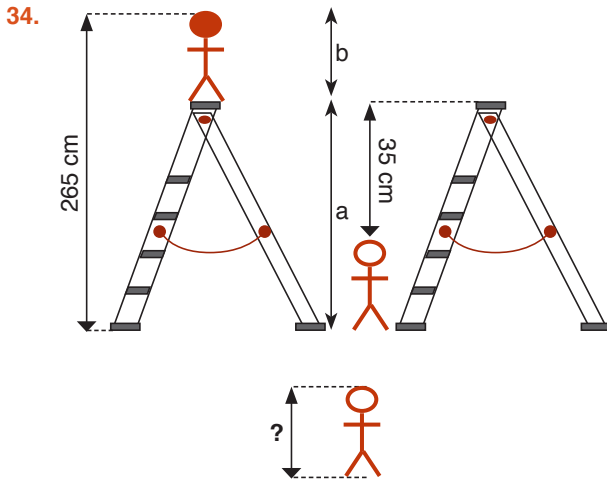
$$B \text{ şıkkı} \rightarrow 1 \text{ ile } 6 \text{ yan yana}$$

$$C \text{ şıkkı} \rightarrow 2 \text{ ile } 3 \text{ yan yana}$$

$$D \text{ şıkkı} \rightarrow 4 \text{ ile } 5 \text{ yan yana}$$

$$E \text{ şıkkı} \rightarrow 2 \text{ ile } 3 \text{ yan yana}$$

Cevap: A



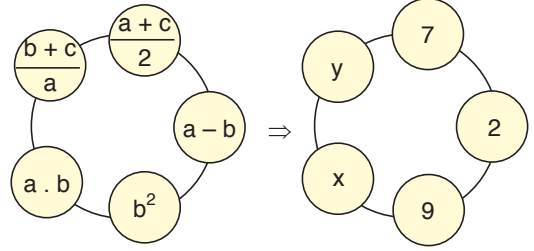
$$\begin{array}{r} a + b = 265 \\ - a - b = 35 \\ \hline 2b = 230 \\ b = 115 \end{array}$$

Cevap: D

35. Küpler sayıldığında 40 tane gelir.

Cevap: B

36.



$$b^2 = 9 \Rightarrow b = 3$$

$$a - b = 2 \Rightarrow a = 5$$

$$\frac{a+c}{2} = 7 \Rightarrow c = 9$$

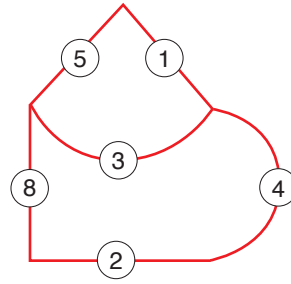
$$\frac{b+c}{a} = y \Rightarrow \frac{12}{5} = y$$

$$a \cdot b = x \Rightarrow x = 15$$

$$\sqrt{\frac{12}{5} \cdot 15} = 6$$

Cevap: A

37.



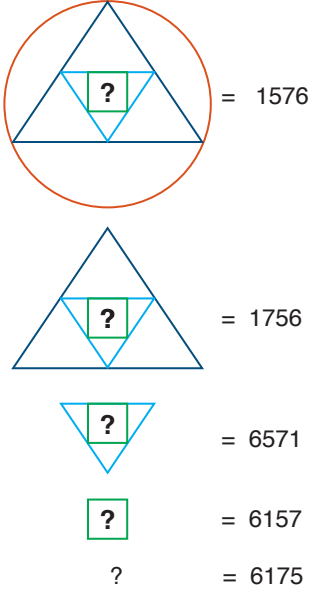
$$= 1541$$

$$= 11612$$

$$\begin{array}{r} \text{Çarp } 8 \quad 3 \\ \hline 24 \\ \text{Çarp } 4 \quad 4 \\ \hline 16 \\ \hline 2485 \end{array}$$

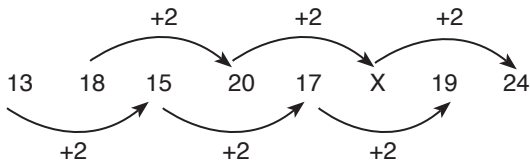
Cevap: E

38.



Cevap: C

39.



$$x = 22$$

Cevap: D

40.

+	x ▲	x x ▲ ▲	○ △
t ●		○○○○ ○○○○	▲ ▲ ▲
○			
z △	○○○○ ○○○○		

$$\triangle \triangle = \triangle + \triangle \Rightarrow \bullet + \triangle = ?$$

$$t + z = ?$$

$$\triangle = x$$

$$\circ = y$$

$$\triangle = z$$

$$\bullet = t \text{ olsun.}$$

$$\begin{array}{r}
 x + 2x = 8y \\
 - / x + y + z = 3x \\
 + \quad z + x = 9y \\
 \hline
 3x + y = 17y - 3x
 \end{array}$$

$$6x = 18y$$

$$x = 3y \Rightarrow z = 6y \Rightarrow t = 2y$$

$$t + z = 8y = \triangle \triangle \circ \circ$$

Cevap: E

$$\begin{aligned}
 41. \quad & \left(4 \cdot \frac{1}{2}\right) \frac{1}{4} - \frac{1}{2} \\
 & = (4 \cdot 2) \frac{1}{4} - \frac{1}{2} \\
 & = 8 \cdot \frac{1}{4} - \frac{1}{2} \Rightarrow 2 - \frac{1}{2} = \frac{3}{2}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 42. \quad & (0,000027)^{\frac{11}{3}} \cdot 10^{22} \\
 & = (27 \cdot 10^{-6})^{\frac{11}{3}} \cdot 10^{22} \\
 & = (3^3 \cdot 10^{-6})^{\frac{11}{3}} \cdot 10^{22} \\
 & = (3^3)^{\frac{11}{3}} \cdot (10^{-6})^{\frac{11}{3}} \cdot 10^{22} \\
 & = 3^{11} \cdot 10^{-22} \cdot 10^{22} = 3^{11}
 \end{aligned}$$

Cevap: E

$$\begin{aligned}
 43. \quad & \sqrt{0,006} \cdot \sqrt{0,08} \cdot \sqrt{0,3} \\
 & = \sqrt{0,006 \cdot 0,08 \cdot 0,3} = \sqrt{0,000144} \\
 & = \sqrt{\frac{144}{1000000}} = \frac{12}{1000} \\
 & = 0,012
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 44. \quad & \begin{cases} a^b = b^a \\ 2a = 3b \rightarrow a = 3k \\ b = 2k \end{cases} \\
 & \rightarrow (3k)^{2k} = (2k)^{3k} \\
 & 3k = (2k)^{\frac{3k}{2k}} \\
 & 3k = (2k)^{\frac{3}{2}} \\
 & 9k^2 = (2k)^3 \\
 & 9k^2 = 8k^3 \\
 & \boxed{\frac{9}{8} = k} \\
 & a = 3k = 3 \cdot \frac{9}{8} = \frac{27}{8}
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 45. \quad & -2 \quad \left| \quad \frac{2}{x} + \frac{5}{y} = 6 \right. \\
 & \rightarrow 5 \quad \left| \quad \frac{2}{y} + \frac{10}{x} = 8 \right. \\
 & \rightarrow -\frac{4}{x} - \frac{10}{y} = -12 \\
 & + \quad \frac{10}{y} + \frac{50}{x} = 40 \\
 & \hline
 & \frac{46}{x} = 28 \\
 & x = \frac{46}{28} = \frac{23}{14}
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 46. \quad & \sqrt{11 + \sqrt{21}} - \sqrt{11 - \sqrt{21}} \\
 & = \frac{\sqrt{22 + 2\sqrt{21}}}{\sqrt{2}} - \frac{\sqrt{22 - 2\sqrt{21}}}{\sqrt{2}} \\
 & = \frac{\sqrt{21} + 1}{\sqrt{2}} - \frac{\sqrt{21} - 1}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}
 \end{aligned}$$

Cevap: D

$$\begin{aligned}
 47. \quad & a - b - 1 = 0 \Rightarrow a - b = 1 \quad 2a - 2b = 2 \\
 & 3a + 2b - 13 = 0 \Rightarrow 3a + 2b = 13 \quad + \quad 3a + 2b = 13 \\
 & \hline
 & 5a = 15 \\
 & \boxed{a = 3} \\
 & a - b = 1 \\
 & \boxed{b = 2} \\
 & a + b = 3 + 2 = 5
 \end{aligned}$$

Cevap: A

48. $ax = by = cz = \frac{1}{6}$

$$\frac{a}{x} = \frac{b}{y} = \frac{c}{z} = \frac{1}{6}$$

$$\frac{a+b+c}{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}} = \frac{1}{6}$$

$$\frac{30}{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}} = \frac{1}{6} \Rightarrow 30 \cdot 6 = \frac{1}{x} + \frac{1}{y} + \frac{1}{z}$$

$$\Rightarrow 180 = \frac{1}{\frac{x}{yz}} + \frac{1}{\frac{y}{xz}} + \frac{1}{\frac{z}{xy}}$$

$$\Rightarrow 180 = \frac{yz + xz + xy}{x \cdot y \cdot z}$$

$$\Rightarrow 180 = \frac{yz + xz + xy}{2}$$

$$\Rightarrow 360 = yz + xz + xy$$

Cevap: D

49. $|x+1| \leq 2$ ve $|x-1| < 5$

$$\begin{aligned} -2 \leq x+1 \leq 2 & \quad -5 < x-1 < 5 \\ -3 \leq x \leq 1 & \quad -4 < x < 6 \end{aligned}$$

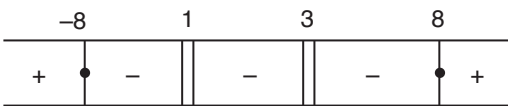
$$A = \{-3, -2, -1, 0, 1\} \quad B = \{-3, -2, -1, 0, 1, 2, 3, 4, 5\}$$

O halde $s(A \cap B) = 5$ olur.

Cevap: B

50. $(a^2 - 64)^{1991} = 0$, $(a-1)^{2000} = 0$, $(a-3)^{1990} = 0$

$$\begin{aligned} a^2 &= 64 & a &= 1 & a &= 3 \\ a &= 8 \text{ ve } a = -8 & \text{çift katlı kök} & & \text{çift katlı kök} \end{aligned}$$



$$\text{Ç.K} = [-8, 8] - \{1, 3\}$$

Cevap: D

51. $\binom{10}{0} + \binom{10}{1} + \binom{10}{2} + \binom{10}{3} + \dots + \binom{10}{10} = 2^{10}$

$$\left. \begin{aligned} \binom{10}{2} + \binom{10}{4} + \dots + \binom{10}{10} &= x \\ + \binom{10}{3} + \binom{10}{5} + \dots + \binom{10}{9} &= y \end{aligned} \right\} \begin{array}{l} \text{iki denklemi} \\ \text{toplarsak} \end{array}$$

$$\binom{10}{2} + \binom{10}{3} + \binom{10}{4} + \dots + \binom{10}{9} + \binom{10}{10} = x + y$$

$$x + y = 2^{10} - \left[\binom{10}{0} + \binom{10}{1} \right] = 1024 - 11 = 1013$$

$$\Rightarrow x + y - 1 \text{ yazılırsa; } 1013 - 1 = 1012$$

Cevap: B

52. $A = \{a, b, e, de\}$ O halde $A \setminus (B \cap C)$
 $B \cap C = \{e, m\}$ $= \{a, b, d\}$ olur.

Cevap: D

53. $f\left(\frac{2x}{3} + 2\right) = \frac{x}{3} - 4$, $g(x) = \frac{x-5}{2}$

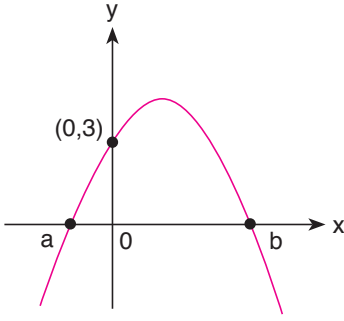
$$(f^{-1} \circ g)(3) \Rightarrow f^{-1}(g(3)) = f^{-1}(-1) = ?$$

$$g(3) = \frac{3-5}{2} = -1$$

$$f^{-1}\left(\frac{x}{3} - 4\right) = \frac{2x}{3} + 2 \quad x = 9 \text{ için} \quad f^{-1}(-1) = 8$$

Cevap: B

54.



$$y = -x^2 + mx + 3$$

$a = n$ ise $b = n + 4$ olur, kökler çarpımı $= a \cdot b = -3$

$$n \cdot (n + 4) = -3$$

$$\boxed{n = -1} \text{ olur.}$$

$$\Rightarrow \text{Kökler toplamı} = a + b = \frac{-m}{-1}$$

$$= -1 + 3 = m$$

$$\boxed{m = 2}$$

Cevap: E

56.

$$\frac{f(x-3)}{f(x+2)} = \frac{(x-3) \cdot 5^{x-3}}{(x+2) \cdot 5^{x+2}} = 5^{-3}$$

$$\Rightarrow \frac{(x-3)}{(x+2)} \cdot 5^{-5} = 5^{-3} \Rightarrow \frac{x-3}{x+2} = 25$$

$$25x + 50 = x - 3$$

$$24x = -53$$

$$\boxed{x = -\frac{53}{24}}$$

Cevap: D

55. $a_1 = 4$

$$a_{n+1} = a_n + 3$$

$$n = 1 \text{ için } \cancel{a_2} = a_1 + 3$$

$$n = 2 \text{ için } \cancel{a_3} = \cancel{a_2} + 3$$

$$n = 3 \text{ için } \cancel{a_4} = \cancel{a_3} + 3$$

$$\vdots$$

$$n = 19 \text{ için } \begin{array}{r} + a_{20} = \cancel{a_{19}} + 3 \\ \hline a_{20} = a_1 + 3 \cdot 19 \end{array}$$

$$a_{20} = 4 + 57 \text{ ise } \boxed{a_{20} = 61} \text{ olur.}$$

Cevap: B

$$57. P(x) = 4 \cdot x^{\frac{13}{m-5}} - 6 \cdot x^{25-2m} + 4x^{13} + 5x^{10} - 4$$

$$\frac{13}{m-5} \in \mathbb{Z}^+ \quad 25 - 2m \geq 0 \quad \text{olmalıdır.}$$

$$m = 6 \quad 2m \leq 25$$

6

O halde $m = 6$ için

$$P(x) = 4 \cdot x^{13} - 6 \cdot x^{13} + 4 \cdot x^{13} + 5 \cdot x^{10} - 4$$

$$P(x) = 2 \cdot x^{13} + 5 \cdot x^{10} - 4$$

O halde başkatsayı 2 olur.

$$\Rightarrow P(1) = 2 \cdot 1^{13} + 5 \cdot 1^{10} - 4$$

$$= 2 + 5 - 4$$

$$= 3$$

Cevap: A

58. $\frac{\frac{3}{4!} + \frac{5}{5!}}{\frac{6}{6!}} = \frac{\frac{3}{24} + \frac{5}{120}}{\frac{6}{720}}$

$$= \frac{\frac{3}{24} + \frac{1}{24}}{\frac{1}{120}} = \frac{4}{24} \cdot \frac{120}{1}$$

$$= 20 \text{ bulunur.}$$

Cevap: C

59. $|a| = b + 3$ ise
 $a = b + 3$ veya $a = -b - 3$ olmalıdır.
 Bu iki durumu diğer eşitlikte yerine yazalım
 $a = b + 3$ için $|a - b| = b + 9$
 $|b + 3 - b| = b + 9$
 $3 = b + 9 \Rightarrow b = -6$ olup
 bu değer $|a| = b + 3$ eşitliğinde yazıldığında
 $|a| = -3$ olamaz.

- $a = -b - 3$ için
 $|-b - 3 - b| = b + 9$
 $-2b - 3 = b + 9$ $-2b - 3 = -b - 9$
 $-12 = 3b$ $6 = b$ (sağlar)
 $-4 = b$
 (sağlamaz)

b = 6 için

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

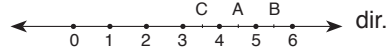
a = 9 veya a = -9

a = 9 için	$ a - b = b + 9$	a = -9
b = 6	$ 9 - 6 = 6 + 9$	b = 6 için sağlar.
	3 ≠ 15	O halde
		a.b = -9.6 = -54

bulunur.

Cevap: A

60. $A = 2\sqrt{5} = \sqrt{4.5} = \sqrt{20}$
 $4 < A < 5$
 $B = 3\sqrt{3} = \sqrt{9.3} = \sqrt{27}$
 $5 < B < 6$
 $C = \sqrt{10}$
 $3 < C < 4$
 O halde $C < A < B$ 'dir.



Cevap: B

61. $a - \sqrt{a} = 7 \Rightarrow \frac{a^2 - \sqrt{a} + a - a\sqrt{a}}{a + 1}$
 $= \frac{a(a + 1) - \sqrt{a}(1 + a)}{a + 1}$
 $= \frac{(a + 1) \cdot (a - \sqrt{a})}{a + 1}$
 $= a - \sqrt{a} = 7$

Cevap: B

62. i)	$a + b.c = 9$	ii)	$a + b.c = 9$
+	$b + a.c = 3$	+	$b + a.c = 3$
$a + b + c(a + b) = 12$		$(a - b) + c(b - a) = 6$	
$(a + b)(c + 1) = 12$		$(a - b)(1 - c) = 6$	
		$(a - b)(c - 1) = -6$	

i ve ii'den bulduğumuz denklemleri taraf tarafa çarparsak,

$$(a + b)(c + 1) = 12$$

$$\times (a - b)(c - 1) = -6$$

$$(a^2 - b^2)(c^2 - 1) = -72 \text{ olur.}$$

Cevap: A

$$\begin{aligned}
 63. \quad & \frac{2x(5-x)+12}{x(2-x)+3} : \left(1 + \frac{3}{3-x}\right) \\
 & \frac{10x-2x^2+12}{2x-x^2+3} : \left(\frac{3-x+3}{3-x}\right) \\
 & \frac{-(2x^2-10x-12)}{-(x^2-2x-3)} \cdot \frac{3-x}{6-x} \\
 & \frac{2(x^2-5x-6)}{x^2-2x-3} \cdot \frac{x-3}{x-6} \\
 & \frac{2 \cdot \cancel{(x-6)} \cdot (x+1)}{\cancel{(x-3)} \cdot (x+1)} \cdot \frac{\cancel{x-3}}{\cancel{x-6}} = 2
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 64. \quad & a.b.c = 2(a+b) \text{ ve } a=k \text{ ise } b=2k \text{ dir.} \\
 & 2k^2.c = 2.3k \\
 & c = \frac{3}{k} \\
 & 3k + \frac{k}{3} = \frac{10k}{3} = \frac{30}{3} \Rightarrow k=9, c = \frac{3}{9} = \frac{1}{3}
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 65. \quad & f(x) \text{ fonksiyonunu bulabilmek için;} \\
 & \frac{x-2}{3} \text{ 'ün tersi } 3x+2 \text{ ifadesini } x \text{ gördüğümüz} \\
 & \text{yere yazarsak} \\
 & f(x) = 5(3x+2) - 25 = 15x - 15 \\
 & \bullet f(a) < 14a \\
 & 15a - 15 < 14a \\
 & a < 15 \text{ ve } a \text{ 'nın en büyük değeri } 14 \text{ olur.}
 \end{aligned}$$

Cevap: C

$$\begin{aligned}
 66. \quad & \left(1 - \frac{1}{3}\right) \cdot \left(2 - \frac{2}{4}\right) \cdot \left(3 - \frac{3}{5}\right) \cdot \dots \cdot \left(9 - \frac{9}{11}\right) \\
 & = \left(1 - \frac{1}{3}\right) \cdot 2 \cdot \left(1 - \frac{1}{4}\right) \cdot 3 \cdot \left(1 - \frac{1}{5}\right) \cdot \dots \cdot 9 \cdot \left(1 - \frac{1}{11}\right) \\
 & = \frac{2 \cdot 3 \cdot 4 \cdot \dots \cdot 9}{9!} \cdot \left(1 - \frac{1}{3}\right) \cdot \left(1 - \frac{1}{4}\right) \cdot \left(1 - \frac{1}{5}\right) \cdot \dots \cdot \left(1 - \frac{1}{11}\right) \\
 & = 9! \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \dots \cdot \frac{10}{11} \\
 & = 9! \cdot \frac{2}{11}
 \end{aligned}$$

Cevap: D

$$67. \quad 0 < x < 1 \quad x = \frac{1}{4} \text{ alalım.}$$

$$a = x^2 = \left(\frac{1}{4}\right)^2 = \frac{1}{16}$$

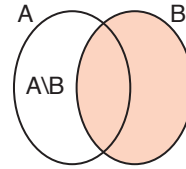
$$b = \frac{1}{x} = \frac{1}{\frac{1}{4}} = 4$$

$$c = \frac{1}{\sqrt{x}} = \frac{1}{\sqrt{\frac{1}{4}}} = \frac{1}{\frac{1}{2}} = 2$$

$$a < c < b$$

Cevap: B

68.



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

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

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

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

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

$$6x = 3x + 15$$

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

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

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

Cevap: D

69. Elma x Armut $60-x$ olur.

$$\Rightarrow x \cdot \frac{7}{100} + (60-x) \cdot \frac{5}{100} = 3,5$$

$$\Rightarrow \frac{7x + 300 - 5x}{100} = 3,5$$

$$\Rightarrow 2x + 300 = 350$$

$x = 25$ olur. Toplam elma sayısı olur.

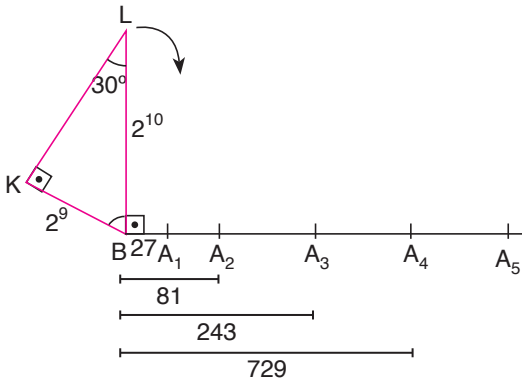
$$\text{Sağlam elma} = 25 - 25 \cdot \frac{7}{100}$$

$$= 25 - 1,75$$

$$= 23,25 \text{ olur.}$$

Cevap: B

70.

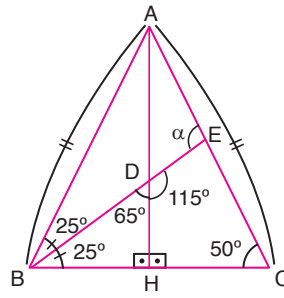


$$\left. \begin{array}{l} n = 1 \text{ için } |BA_1| = 3^3 \\ n = 2 \text{ için } |BA_2| = 3^4 = 81 \\ n = 3 \text{ için } |BA_3| = 3^5 = 243 \\ n = 4 \text{ için } |BA_4| = 3^6 = 729 \end{array} \right\} |BL| = 2^{10} = 1024$$

$n = 5$ için L noktasının konumu: $A_4 < L < A_5$ olur.

Cevap: E

71.



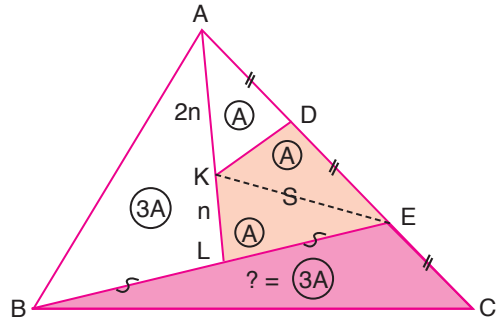
$$|AB| = |AC|$$

$$|BH| = |HC|$$

$$\alpha = 75^\circ \text{ olur.}$$

Cevap: E

72.

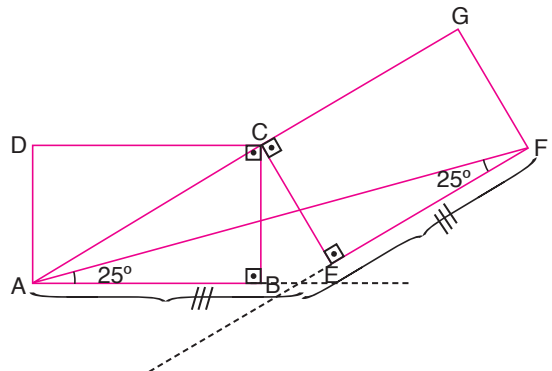


$$2A = S \quad \text{O halde } ? = 3.A$$

$$A = \frac{S}{2} \quad ? = \frac{3}{2}S$$

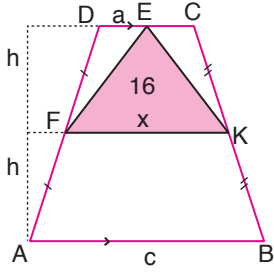
Cevap: C

73. AB uzantısı ve EF uzantısı alınırsa $x = 25^\circ$ olduğu görülür.



Cevap: C

74.



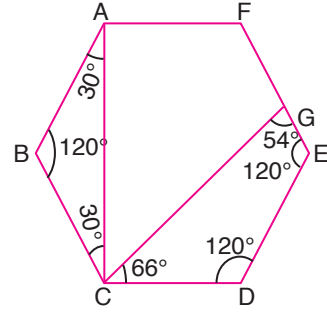
$$\text{Orta taban} = x = \frac{a+c}{2}$$

$$A(\triangle EFK) = \frac{x \cdot h}{2} = 16 \quad x \cdot h = 32$$

$$\text{Tüm alan} = 2 \cdot x \cdot h = 2 \cdot 32 = 64 \text{ cm}^2$$

Cevap: B

76.



$$\text{Altıgenin bir iç açısı, } \frac{360}{6} = 60 \rightarrow \text{dış açısı}$$

$$180 - 60 = 120 \text{ iç açısı}$$

ABC ikizkenar üçgen

$$120 + 120 + 54 = 294$$

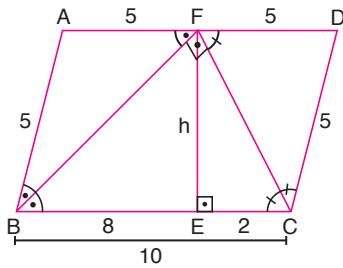
$$360 - 294 = 66 \rightarrow \widehat{GCD} \text{ açısı}$$

$$120 - (66 + 30) = m(\widehat{ACG}) = 24^\circ$$

$$\begin{array}{r} 120 \\ - 96 \\ \hline 24 \end{array}$$

Cevap: C

75.



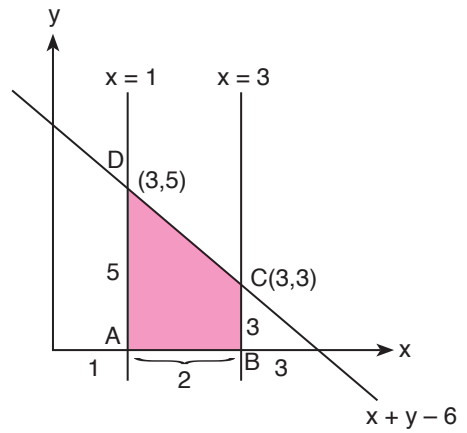
$$AD = BC = 10 \text{ olur.}$$

$$h^2 = 8.2$$

$$h^2 = 16 \rightarrow h = 4 \text{ olur.}$$

Cevap: A

77.



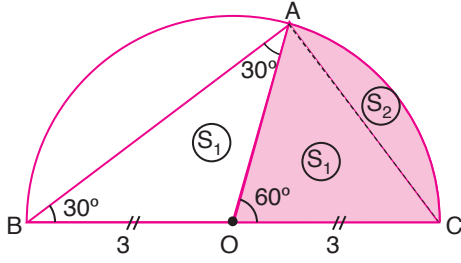
$$x = 1 \text{ için } 1 + y - 6 = 0 \Rightarrow y = 5$$

$$x = 3 \text{ için } 3 + y - 6 = 0 \Rightarrow y = 3$$

$$\Rightarrow A(ABCD) = \frac{5+3}{2} \cdot 2 = 8 \text{ br}^2 \text{ olur.}$$

Cevap: A

78.

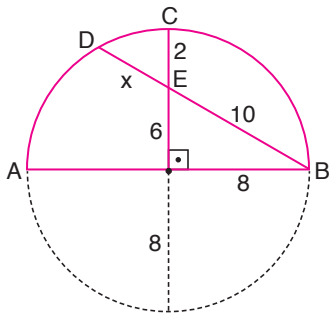


$$S_1 + S_2 = \pi \cdot 3^2 \cdot \frac{60}{360}$$

$$= \frac{9\pi}{6} = \frac{3\pi}{2}$$

Cevap: B

79.



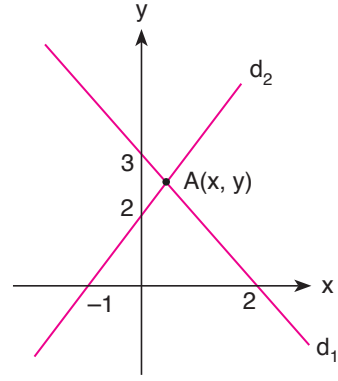
$$x \cdot 10 = 2 \cdot 14$$

$$10 \cdot x = 28$$

$$x = 2,8$$

Cevap: E

80.



$$d_1: \frac{x}{3} + \frac{y}{2} = 1 \rightarrow 3x + 2y = 6$$

$$d_2: \frac{x}{2} + \frac{y}{1} = 1 \rightarrow y - 2x = 2 \text{ olur.}$$

O halde

$$\begin{cases} 3x + 2y = 6 \\ -2y - 2x = 2 \end{cases} \quad \begin{array}{r} 3x + 2y = 6 \\ + -2y - 2x = 2 \\ \hline 7x = 2 \end{array}$$

$$x = \frac{2}{7} \text{ olur.}$$

$$\begin{cases} y - \frac{4}{7} = 2 \\ y = 2 + \frac{4}{7} \end{cases} \quad \begin{array}{l} \text{O halde} \\ x + y = \frac{2}{7} + \frac{18}{7} \\ x + y = \frac{20}{7} \end{array}$$

$$y = \frac{18}{7}$$

Cevap: E