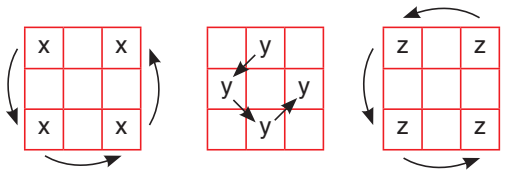
ÇÖZÜMLER

1.



Cevap: B

2. $57 - \boxed{57} - \boxed{57 - 49}$

$= 57 - 49 - \boxed{8}$

$= 57 - 49 - \boxed{4}$

$= 57 - 49 - 4$

$= 4$

Cevap: A

3.

A2K	C3M	Ⓑ1L
		Ⓒ2M
		A3K

→ A, B, C / 1, 2, 3 / KLM

↓

A, B, C / 1, 2, 3 / KLM

Cevap: D

4. Her beş şekilden sonra tekrar var.

102 | 5
− 100 | 10
2 → Baştan 2. şekil

Cevap: B

5.

2	2	1	3	→ 2 + 2 = 1 + 3 = 4
2	3	4	1	→ 3 + 2 = 4 + 1 = 5
1	5	2	4	→ 1 + 5 = 2 + 4 = 6
3	4	**x**	**y**	→ 3 + 4 = x + y = 7

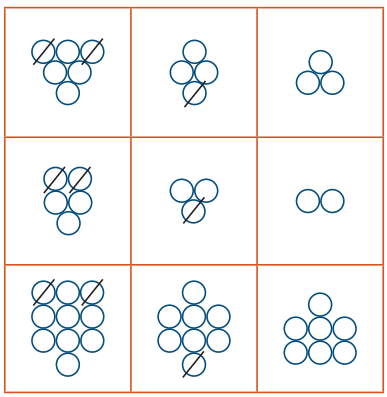
Cevap: C

6.

$2^1 = 2$	$2 - 1 = 1$
$2^2 = 4$	$4 - 1 = 3$
$2^3 = 8$	$8 - 1 = 7$
$2^4 = 16$	$16 - 1 = 15$
$2^5 = 32$	$32 - 1 = 31$
$2^6 = 64$	$64 - 1 = 63$
$2^7 = 128$	$128 - 1 = 127$
$2^8 = 256$	$256 - 1 = 255$

Cevap: B

7.



Cevap: A

Diğer Sayfaya Geçiniz.

8.

$$1$$
$$1 \quad 1 \quad 1$$
$$1 + 2 = 3 = 2 + 1$$
$$1 + 2 + 3 = 6 = 3 + 2 + 1$$
$$1 + 2 + 3 + 6 = 12 = 6 + 3 + 2 + 1$$
$$1 + 2 + 3 + 6 + 12 = 24 = 12 + \square + 3 + 2 + 1$$
$$\downarrow \qquad \downarrow$$
$$\bigcirc \qquad 6$$

Cevap: D

9. $\nabla \times \bigstar = \nabla \Rightarrow \bigstar = 1$

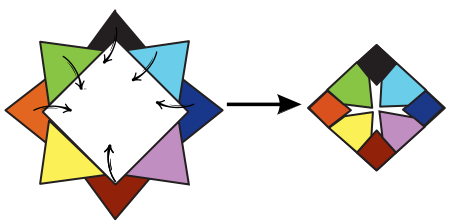
$\square \times \square + 1 = 17 \quad \square \times \square = 16 \quad \square = 4$

$\square - \nabla = \bigstar \Rightarrow 4 - \nabla = 1 \quad \nabla = 3$

$\square + \nabla + \bigstar = 4 + 3 + 1 = 8$

Cevap: E

10.



Cevap: A

11. $2.5 + E = 19 \quad \boxed{E = 9}$

$5.6 + C = 38 \quad \boxed{C = 8}$

$A + 6 - 7 = 3 \quad \boxed{A = 4}$

$2 + A.B = 14 \quad \boxed{B = 3}$

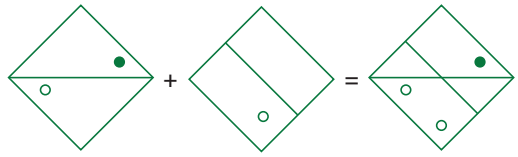
$E - 7 + D = 3 \qquad 9 - 7 + D = 3 \qquad \boxed{D = 1}$

Cevap: B

12. $\dfrac{C \times B}{A} = \dfrac{8 \times 3}{4} = \dfrac{24}{4} = 6$

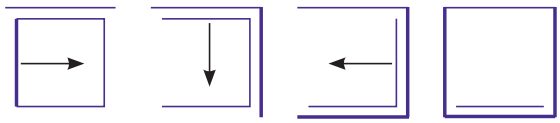
Cevap: C

13.



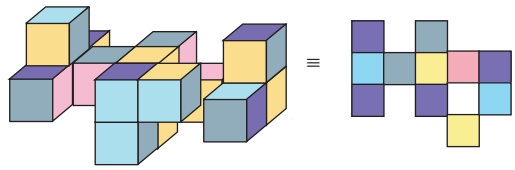
Cevap: B

14.



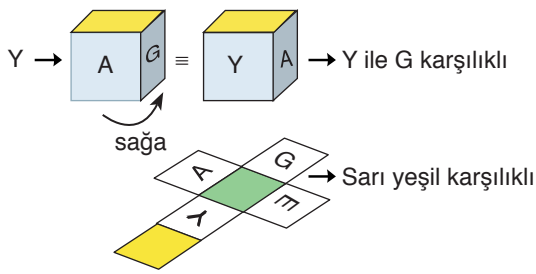
Cevap: A

15.



Cevap: E

16.



Cevap: E

17. $a \odot b = 2ab - 2.(a \odot b) + 1$

$3.(a \odot b) = 2ab + 1$

$a \odot b = \dfrac{2ab + 1}{3}$

$5 \odot 2 = \dfrac{2.5.2 + 1}{3} = \dfrac{21}{3} = 7$

Cevap: D

18. a b

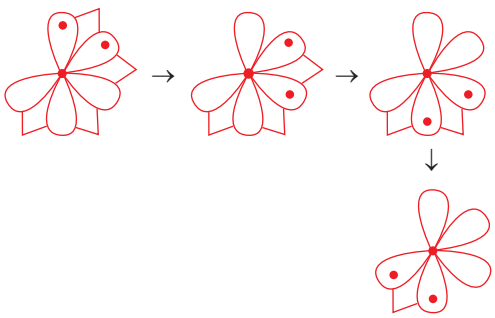
$-1 < 1$; $(-1) \star 1 = a - 3b = -1 - 3 = -4$

$-4 > -5$; $(-4) \star (-5) = 2ab - 1 = 2.(-4).(-5) - 1$

$= 40 - 1 = 39$

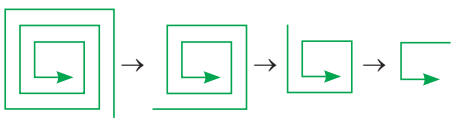
Cevap: A

19.



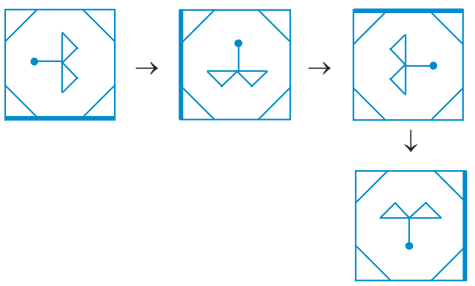
Cevap: C

20.



Cevap: B

21.



Cevap: D

22. $a.b = 6$ $d = 6$, $b = 3$, $a = 2$, $c = 4$

$\frac{a}{c} = \frac{1}{2}$

$d = 6$

$b.d = 18$

$\frac{a+b}{2} = K = ?$ $K = \frac{2+3}{2} = \frac{5}{2}$

Cevap: E

23. $a - b = 2$

$\frac{a+b}{2} = 4$ $a + b = 8$

$+ \; a - b = 2$

$2a = 10$ $a = 5$

$b = 3$

$\frac{a}{c} = 5$ $\frac{5}{c} = 5$ $c = 1$

$b.d = 12$ $d = 4$

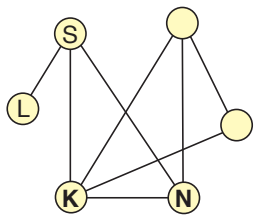
$K = a.b = 5.3 = 15$

$M = d = 4$

$K + M = 15 + 4 = 19$

Cevap: B

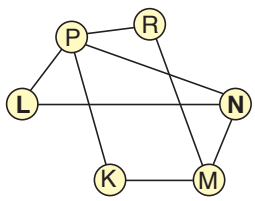
24.



$X = K$; $Y = N$

Cevap: A

25.



$X = N$; $Y = L$

Cevap: D

26. $\bowtie = 2$

$\oplus = 4$

$\Phi = 5$ $\Phi \blacksquare \nabla = 579$

$\blacksquare = 7$

$\nabla = 9$

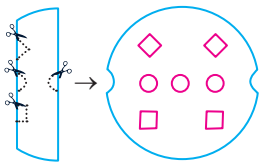
Cevap: C

Diğer Sayfaya Geçiniz.

27. ⊜ = 2
☺ = 3
♡ = 4 ⋈⊙☺⊜ = 7532
⊙ = 5
⋈ = 7
↑ = 9

Cevap: D

28.



Cevap: D

29. $a^2 = 2b + 1$

$b^2 = b + 12 \Rightarrow b^2 - b - 12 = 0$

$\Rightarrow (b - 4).(b + 3) = 0$

$\boxed{b = 4}$

$a^2 = 9$ $\boxed{a = 3}$

Cevap: C

30. $c^2 + 1 = 37$

$c^2 = 36$ $\boxed{c = 6}$

$b + c = 18$ $\boxed{b = 12}$

Cevap: A

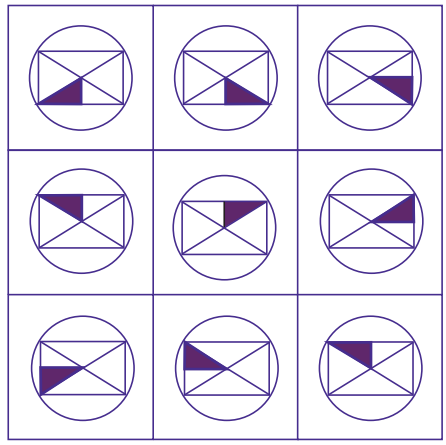
31. $2\triangle + \bigcirc = \triangle + \square \Rightarrow \triangle + \bigcirc = \square$

$2\square = 3\triangle$ $\square = 3k$ $\triangle = 2k$ $\bigcirc = k$

$\bigcirc\bigcirc\square\ \square = 8k$ $\triangle\triangle\triangle\bigcirc\bigcirc = 6k + 2k = 8k$

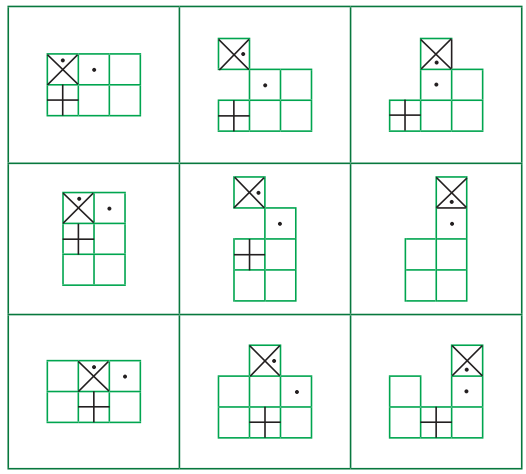
Cevap: E

32.



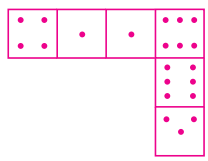
Cevap: B

33.



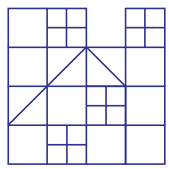
Cevap: E

34.



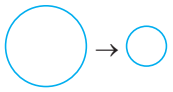
Cevap: C

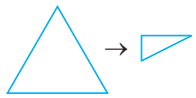
35.



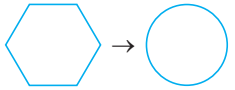
Cevap: A

36. A) 

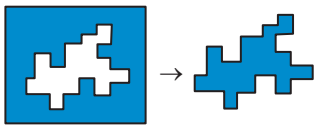
B) 

C) 

D) 

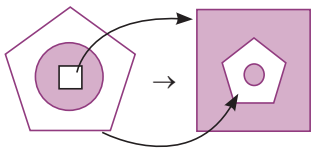
E) 

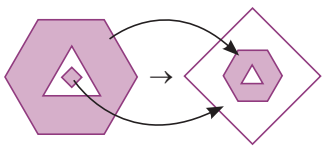
Cevap: E

37. 

D şıkkını ters çevirdiğimizde şekil ortaya çıkar.

Cevap: D

38. 



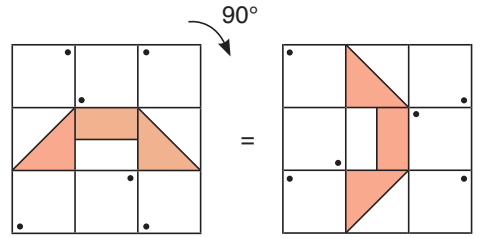
Cevap: E

39. 3 + 8 = 11 11.3 = 33

5 + 7 = 12 12.3 = 36

2 + 7 = 9 9.3 = 27

Cevap: B

40. 

Cevap: E

41. $\sqrt{7-\frac{3}{4}}-\sqrt{12+\frac{1}{4}}=\sqrt{\frac{25}{4}}-\sqrt{\frac{49}{4}}$

$=\frac{5}{2}-\frac{7}{2}=-1$

Cevap: B

42. $4^x=5 \qquad 2^x=\sqrt{5}$

$8^x=2^x.2^x.2^x=\sqrt{5}.\sqrt{5}.\sqrt{5}=5\sqrt{5}$

Cevap: C

43. $\left(3.2^x-\frac{2}{3.2^x}\right)^2=(6)^2$

$9.4^x-2.3.\cancel{2^x}.\frac{2}{3.\cancel{2^x}}+\frac{4}{9.4^x}=36$

$9.4^x+\frac{4}{9.4^x}=40$

$\frac{81.16^x+4}{9.4^x}=40$

Cevap: D

44.
$$\begin{array}{rl} & 2x-\cancel{y}+\cancel{z}=15 \\ & x-\cancel{y}-\cancel{z}=0 \\ + & x+2\cancel{y}=13 \\ \hline & 4x=28 \end{array} \qquad x=7$$

Cevap: B

Diğer Sayfaya Geçiniz.

45. $A = \{0, 3, 6, ..., 96\}$

$B = \{20, 24, ..., 104\}$

$A \cap B = \{24, 36, 48, 60, 72, 84, 96\}$

$s(A \cap B) = 7$

Cevap: E

46. $\frac{14!(15+1)}{(n+7)} = \frac{(n+6)!}{15}$

$16.15.14! = (n+7).(n+6)!$

$16! = (n+7)!$

$n + 7 = 16$

$n = 9$

Cevap: D

47. $x = \sqrt{14+6\sqrt{5}} = \sqrt{14+2\sqrt{45}} = \sqrt{9}+\sqrt{5} = 3+\sqrt{5}$

$y = 6 - 2\sqrt{5} = 2.(3-\sqrt{5})$

$x.y = 2.\underbrace{(3-\sqrt{5}).(3+\sqrt{5})} = 2.(9-5) = 2.4 = 8$

Cevap: A

48. $x = 1 \Rightarrow (2x+1)^4 = 3^4 = 81 = A + \cancel{B} + C + \cancel{D} + E$

$x = -1 \Rightarrow (-1)^4 = \quad 1 = A - \cancel{B} + C - \cancel{D} + E$

$+$

$82 = 2A + 2C + 2E$

$41 = A + C + E$

Cevap: A

49. $f(x) = x^2 + 4x = x^2 + 4x + 4 - 4$

$y = (x+2)^2 - 4$

$y + 4 = (x+2)^2$

$\sqrt{y+4} = x + 2$

$\sqrt{y+4} - 2 = x$

$f^{-1}(x) = \sqrt{x+4} - 2$

$f^{-1}(x) + 2 = \sqrt{x+4}$

$(f^{-1}(x) + 2)^2 = x + 4$

Cevap: C

50. $x^2 - 16x + 4x_2 = 0$

$x_1 + x_2 = 16 \qquad x_1.\cancel{x_2} = 4\cancel{x_2}$

$\boxed{x_1 = 4} \qquad \boxed{x_2 = 12}$

$2x_1 + 3x_2 = 8 + 36 = 44$

Cevap: E

51. $\frac{\cancel{(a-b)}.(\cancel{a^2+ab+b^2})}{\cancel{(a-b)}.(a+b)} \cdot \frac{\frac{a+b}{ab}}{\cancel{(a^2+ab+b^2)}}$

$= \frac{1}{\cancel{a+b}} \cdot \frac{\cancel{a+b}}{ab} = \frac{1}{ab}$

Cevap: D

52. $(x^2-2).P(x) = 3x^3 + 2x^2 - (a+1)x + b - 3$

$x^2 = 2 \Rightarrow 0 = 3.2.x + 4 - (a+1)x + b - 3$

$= \underline{6x} + 4 - \underline{ax} - \underline{x} + b - 3$

$0 = (5-a)x + (b+1)$

$a = 5 \qquad b = -1$

$a - b = 5 - (-1) = 6$

Cevap: B

53. $|a| + 5 = |b| + 2 = |c| = 8$

$|a| + 5 = 8, \qquad |b| + 2 = 8 \qquad |c| = 8$

$|a| = 3 \qquad |b| = 6$

$a=3$ veya $a=-3$ $\quad b=6$ veya $b=-6$ $\quad c=8$ veya $c=-8$

$b < a < c$ ve $a + b + c < 0$ ise

$c = 8$, $a = -3$ ve $b = -6$ olmalıdır.

O halde

$a.b - c = (-3).(-6) - 8$

$= 18 - 8$

$= 10$ olur.

Cevap: E

54. $\frac{a}{8}=\frac{b}{5}=\frac{2}{a-b}$

$\underbrace{\frac{a+b}{8+5}}_{13}=\frac{2}{a-b}$

$(a+b)(a-b)=26$

$a^2-b^2=26$ bulunur.

Cevap: B

55. $x.y-y.z=1$

$y(x-z)=1$ (Her iki tarafı y ile bölelim.)

$x-z=\frac{1}{y}$

$16x+y-16z=8$

$16(x-z)+y=8$

$16.\frac{1}{y}+y=8 \Rightarrow 16+y^2=8y$

$y^2-8y+16=0$

$(y-4)^2=0 \Rightarrow y-4=0$

$y=4$ olur.

Cevap: C

56.

$$\begin{array}{r|l} AB & 1A \\ \hline - & B \\ \hline 0 & \end{array}$$

$AB=(1A).B$

- AB sayısının en büyük değeri için A = 9 seçilir.

  $9B=(19).B$

  $90+B=19B \Rightarrow 90=18B$

  $B=5$

  ve max(AB) = 95 olur.

- En küçük değeri için A = 1 seçilir.

  $1B=(11).B \Rightarrow 10+B=11B \Rightarrow 10=10B$

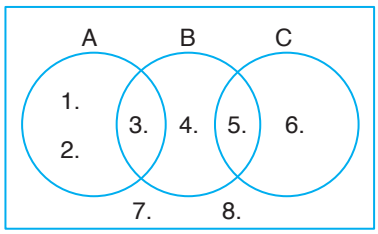
  min(AB) = 11 B = 1

  min(AB) + max(AB) = 11 + 95

  = 106

Cevap: E

57. E



$B'=\{1, 2, 6, 7, 8\}$

$(A\cup B)=\{1, 2, 3, 4, 5\}$

$B'-(A\cup B)=\{6, 7, 8\}$ bulunur.

Cevap: C

58. ABC – CBA = DE5

100A + 10B + C – 100C – 10B – A = DE5

$99\underbrace{(A-C)}_{5 \text{ olmalı}}=DE5$

A > B > C	A – C = 5
	9 4
	8 3
	7 2
	6 1

ABC'nin en küçük değeri istenildiğinden

A = 6 ve C = 1 alınır.

A > B > C

↓ ↓ ↓

6 2 1

ABC = 621 bulunur.

Cevap: B

59. $x<|x| \Rightarrow x<0$

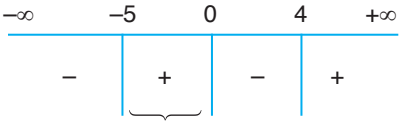
$|x|<\frac{20-x}{|x|}$

$-x<\frac{20-x}{-x} \Rightarrow x>\frac{20-x}{x}$

$\frac{x^2+x-20}{x}>0$

$x^2+x-20=(x+5)(x-4)$

$x=-5$ ve $x=4$



$\Rightarrow \sum x=-4-3-2-1=-10$ bulunur.

Cevap: B

Diğer Sayfaya Geçiniz.

60. $a > 6$

$\underbrace{\sqrt{a+6-2\sqrt{6\cdot a}}}+\underbrace{\sqrt{8+2\sqrt{12}}}=\sqrt{7}+\sqrt{2}$

$(a-\sqrt{6})+(\sqrt{6}+\sqrt{2})=\sqrt{7}+\sqrt{2}$

$\sqrt{a}+\sqrt{2}=\sqrt{7}+\sqrt{2}$

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

$a=7$ bulunur.

Cevap: A

61. $\dfrac{3^{11}+3^{13}+3^{15}}{4\cdot 3^{11}+3^{13}}$

$=\dfrac{3^{11}(1+3^2+3^4)}{3^{11}.(4+3^2)}$

$=\dfrac{1+9+81}{4+9}=\dfrac{91}{13}$

$= 7$ bulunur.

Cevap: B

62. $\dfrac{9!+8!}{(6!-5!)\cdot 4!}$

$=\dfrac{8!(9+1)}{5!(6-1!)\cdot 4!}$

$=\dfrac{8!\cdot 10}{5!\cdot 5\cdot 4!}=\dfrac{\overset{2}{\cancel{8}}\cdot 7\cdot\overset{2}{\cancel{6}}\cdot\cancel{5!}\cdot 10}{\cancel{5!}\cdot\cancel{5}\cdot 1\cdot\cancel{2}\cdot\cancel{3}\cdot\cancel{4}}=28$ bulunur.

Cevap: D

63. $f(x)=\dfrac{x}{a}-\dfrac{1}{b}$

$f(0)=\dfrac{1}{3}\Rightarrow\dfrac{0}{a}-\dfrac{1}{b}=\dfrac{1}{3}$

$b=-3$ olur.

$\ast\ f(1)=\dfrac{4}{3}$ $\qquad \dfrac{1}{a}-\dfrac{1}{b}=\dfrac{4}{3}$

$\dfrac{1}{a}+\dfrac{1}{3}=\dfrac{4}{3}$

$\dfrac{1}{a}=\dfrac{4}{3}-\dfrac{1}{3}$

$a=1$

O halde $a\ .\ b=1.(-3)=-3$

Cevap: A

64.

$P(x)\ \big|\ x+1$ $\qquad$ $P(x)=\underbrace{(x+1).B(x)+k(x)}$

$-\ \ \ \ \ \ \ B(x)$ $\qquad\qquad\qquad\qquad\quad x+1=0$ için

$k(x)$ $\qquad\qquad\qquad\qquad\quad x=-1$ olur.

$P(x)=(x^2+2x+5)Q(x-1)-11$ ifadesinde $x=-1$ alınırsa

$P(-1)=(1-2+5)Q(-2)-11$	$Q(x+1)=x^2-3x-7$
$P(-1)=4.Q(-2)-11$	$x=-3$ için
$P(-1)=4.11-11$	$Q(-2)=9+9-7$
$P(-1)=33$ bulunur.	$Q(-2)=11$
$P(-1)=4.11-11$	
$P(-1)=33$ bulunur.	

Cevap: C

65. $\dfrac{\left(3-\frac{1}{3}\right)+\left(\frac{1}{3}+3\right)}{\left(7+\frac{3}{7}\right)-\left(7+\frac{1}{7}\right)}$

$=\dfrac{\frac{8}{3}+\frac{10}{3}}{\frac{52}{7}-\frac{50}{7}}=\dfrac{\frac{18}{3}}{\frac{2}{7}}$

$=\dfrac{6}{\frac{2}{7}}=\overset{3}{\cancel{6}}\cdot\dfrac{7}{\cancel{2}}$

$= 21$ bulunur.

Cevap: E

66. $\boxed{4ab=c}$

$\downarrow$

$16bc=a$

$16b.4\cancel{a}.b=\cancel{a}$

$64b^2=1\ b^2=\dfrac{1}{64}$

$b=\dfrac{1}{8}$

$a+8\ .\ b+c=3$

$a+8\ .\ \dfrac{1}{8}+c=3$

$a+c=2$

$c=4a.\dfrac{1}{8}\Rightarrow c=\dfrac{a}{2}$

$\Rightarrow a+c=2$

$a+\dfrac{a}{2}=\dfrac{3a}{2}=2\Rightarrow a=\dfrac{4}{3}$

Cevap: C

67. $a - b - c = 0$

$a = b + c$

$a \cdot b = 9$

$+ \quad a \cdot c = 7$

$a(\underbrace{b + c}_{a}) = 16$

$a^2 = 16 \Rightarrow a = 4$ ve $b + c = 4$ olur.

$a \cdot b = 9 \Rightarrow b = \frac{9}{4}$

$a \cdot c = 7 \Rightarrow c = \frac{7}{4}$

O halde

$a \cdot b \cdot c = \cancel{4} \cdot \frac{9}{\cancel{4}} \cdot \frac{7}{4}$

$= \frac{63}{4}$ bulunur.

Cevap: C

68. $\underbrace{\frac{a-2}{b+1} = 3}$

$a - 2 = 3b + 3$

$a - 3b = 5 \ldots (I)$

$\bullet \quad a^2 - 9b^2 = 35$

$\underbrace{(a - 3b)}_{5}(a + 3b) = 35$

$a + 3b = 7 - (II)$

I ve II'den

$a - \cancel{3b} = 5$

$+ \quad a + \cancel{3b} = 7$

$2a = 12 \Rightarrow a = 6$

ve $6 + 3b = 7 \Rightarrow 3b = 1$

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

O halde

$a.b = 6.\frac{1}{3} = 2$ olur.

Cevap: B

69. $C(5, 3) = C(k, 2)$

Not: $a \neq b$

$C(n, a) = C(n, b) \Rightarrow n = a + b$'dir.

Bu durumda

$C(5, 3) = C(5, 2)$ olmalı.

$k = 5$ olur.

II. Yol.

$C(5, 3) = C(k, 2)$

$\frac{5!}{3! \cdot 2!} = \frac{k!}{2! \cdot (k-2)!}$

$10 = \frac{k!}{2 \cdot (k-2)!} \quad 20 = \frac{k \cdot (k-1) \cdot \cancel{(k-2)!}}{\cancel{(k-2)!}}$

$\underbrace{k.(k-1)}_{5 \quad 4} = 20$

$k = 5$ olur.

Cevap: E

70. $\frac{2x+1}{10} < \underbrace{\frac{1}{2}}_{(2)} - \underbrace{\frac{x+8}{5}}_{(2)}$

$\frac{2x+1}{10} < \frac{5 - 2x - 16}{10}$

$2x + 1 < -2x - 11$

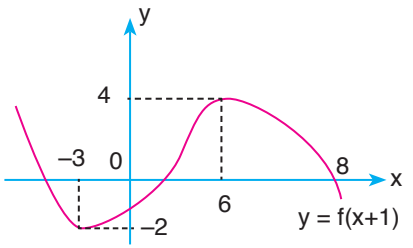
$4x < -12$

$x < -3$

Cevap: B

Diğer Sayfaya Geçiniz.

71.



y = f(x + 1)

- f(7) = ? x + 1 = 7 x = 6
  f(4) = 4
- f(9) = ? x + 1 = 9 x = 8
  f(9) = 0
- f(–2) = ? x + 1 = –2
  f(–2) = –2 x = –3

O halde $\frac{f(7)+f(9)}{f(-2)} = \frac{4+0}{-2} = -2$ bulunur.

Cevap: B

72. $P(x) = x^2 + 2x + a$

$P(-x_1) = x_1^2 - 2x_1 + a = a$

$x_1(x_1 - x_2) = 0$

$x_1 = 0$ $x_1 = 2$

$P\left(\frac{x_2}{2}\right) = \frac{x_2^2}{4} + x_2 + a = a$

$x_2^2 + 4x_2 = 0$

$x_2(x_2 + 4) = 0$

$x_2 = 0$ ve $x_2 = -4$

O halde

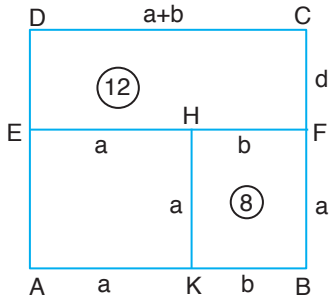
$P(x) = (x - 2)(x + 4)$ ve $3x_1 = 3 \cdot 2 = 6$

$P(3x_1) = P(6) = (6 - 2)(6 + 4)$

$= 4 \cdot 10 = 40$ bulunur.

Cevap: B

73.



$a + b = a + d \Rightarrow b = d$ olur.

$A(\widehat{EFCD}) = (a + b).d = 12$ ve $A(\widehat{HKBF}) = a.b = 8$

$\downarrow$

b

$12 = \underbrace{a.b}_{8} + b^2$

$4 = b^2 \Rightarrow b = 2$ br

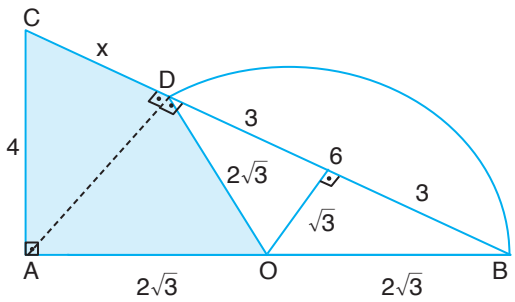
$b = 2$ ise $a = 4$ O halde büyük karenin alanı

$A(ABCD) = (a + b)(a + b) = (6).(6)$

$= 36$ br^2

Cevap: C

74.



Öklid'den $4^2 = x.(x + 6)$

$x = 2$

ADC üçgeninde pisagordan $|AD| = \sqrt{12}$

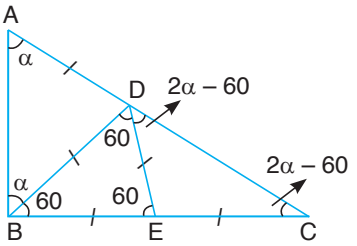
Taralı Alan:

$A(\widehat{ABC}) - A(\widehat{DOB}) = \frac{4 \cdot 4\sqrt{3}}{2} - \frac{6 \cdot \sqrt{3}}{2}$

$= 5\sqrt{3}$ bulunur.

Cevap: C

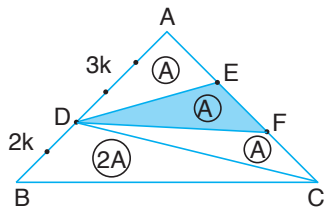
75.



$4\alpha - 120 = 60 \quad 4\alpha = 180 \quad \alpha = 45$

Cevap: C

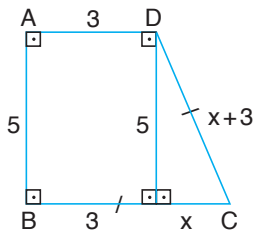
76.



$\Rightarrow 5A = 40 \quad A = 8$

Cevap: B

77.



$x^2 + 25 = (x + 3)^2$

$x^2 + 25 = x^2 + 6x + 9$

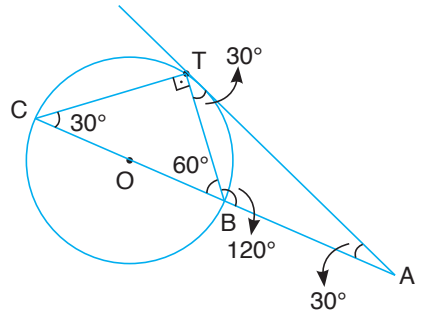
$6x = 16$

$x = \frac{16}{6} = 8/3$

$|DC| = \frac{8}{3} + 3 = \frac{17}{3}$

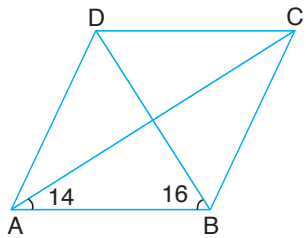
Cevap: E

78.



Cevap: D

79.

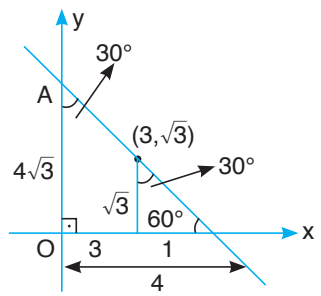


$A(ABCD) = \frac{1}{2} \cdot |AC| \cdot |BD| \cdot \sin 30°$

$= \frac{1}{2} \cdot 8 \cdot 6 \cdot \frac{1}{2} = 12$

Cevap: B

80.



$A = \frac{\cancel{4}^{2} \cdot 4\sqrt{3}}{\cancel{2}} = 8\sqrt{3}$

Cevap: A

Diğer Sayfaya Geçiniz.