ÇÖZÜMLER

1. $\dfrac{1:\frac{2}{3}}{1-2:\frac{2}{5}}+\dfrac{1}{2}=\dfrac{1\cdot\frac{3}{2}}{1-\cancel{2}\cdot\frac{5}{\cancel{2}}}+\dfrac{1}{2}$

$=\dfrac{\frac{3}{2}}{1-5}+\dfrac{1}{2}=\dfrac{\frac{3}{2}}{-4}+\dfrac{1}{2}$

$=-\dfrac{3}{8}+\underset{(4)}{\dfrac{1}{2}}$

$=\dfrac{-3+4}{8}$

$=\dfrac{1}{8}$

Cevap: E

2. $a = 2,\overline{68} = 2,6868\ldots$

$b = 2,\overline{6} = 2,6666\ldots$

$c = 2,687 = 2,6870\ldots$

$a < c$

b en küçük

$\Rightarrow b < a < c$

Cevap: A

3. $\dfrac{8.10^n}{10^m} = 25.5^5.4^5$

$2^3.10^{n-m} = 5^2.5^5.2^{10}$

$\cancel{2^3}.10^{n-m} = 5^7.\cancel{2^{10}}$

$10^{n-m} = 5^7.2^7$

$10^{n-m} = 10^7 \Rightarrow n - m = 7$

$\Rightarrow (n-m)^2 = 7^2 = 49$

Cevap: A

4.

a | b
− | 3
1

$\Rightarrow a = 3b + 1$

a | c
− | 4
2

$\Rightarrow a = 4c + 2$

$\Rightarrow 3b + 1 = 4c + 2$

$4c = 3b + 1 - 2$

$4c = 3b - 1$

$c = \dfrac{3b-1}{4}$

Cevap: C

5. $\dfrac{1}{2!}+\dfrac{2}{3!}+\dfrac{3}{4!}+\dfrac{4}{5!}+\dfrac{5}{6!}+\dfrac{7}{7!}$

$=\dfrac{1}{1!}-\dfrac{\cancel{1}}{\cancel{2!}}+\dfrac{\cancel{1}}{\cancel{2!}}-\dfrac{\cancel{1}}{\cancel{3!}}+\dfrac{\cancel{1}}{\cancel{3!}}-\dfrac{\cancel{1}}{\cancel{4!}}+\dfrac{\cancel{1}}{\cancel{4!}}-\dfrac{\cancel{1}}{\cancel{5!}}+\dfrac{\cancel{1}}{\cancel{5!}}-\dfrac{\cancel{1}}{\cancel{6!}}+\dfrac{\cancel{1}}{\cancel{6!}}-\dfrac{1}{7!}$

$= 1 - \dfrac{1}{7!} = \dfrac{7! - 1}{7!}$

Cevap: D

6.
- $a^2.c > 0 \Rightarrow c > 0$
- $b^2.a.c < 0 \Rightarrow a < 0$
  $\downarrow \quad \downarrow$
  $+ \quad +$
- $a.b.c < 0 \Rightarrow b > 0$
  $\downarrow \quad \downarrow$
  $- \quad +$

$\Rightarrow a = -$

$b = +$

$c = +$

Cevap: D

Diğer Sayfaya Geçiniz.

7. $\dfrac{(a+b)^2}{a^3-b^3}+\dfrac{1}{b-a}=\dfrac{(a+b)^2}{a^3-b^3}-\dfrac{1}{\underbrace{\dfrac{a-b}{(a^2+ab+b^2)}}}$

$$=\frac{(a+b)^2-(a^2+ab+b^2)}{a^3-b^3}$$

$$=\frac{a^2+2ab+\cancel{b^2}-\cancel{a^2}-ab-\cancel{b^2}}{a^3-b^3}$$

$$=\frac{ab}{a^3-b^3}$$

Cevap: B

8. • $\dfrac{a}{b}=\dfrac{c}{d}=k$

• $\dfrac{a-b}{b}\cdot\dfrac{c-d}{d}=36$

$$\left(\frac{a}{b}-\frac{b}{b}\right)\cdot\left(\frac{c}{d}-\frac{d}{d}\right)=36$$

$$\left(\frac{a}{b}-1\right)\cdot\left(\frac{c}{d}-1\right)=36$$

$$(k-1)(k-1)=36$$

$$(k-1)^2=36$$

$$k-1=6 \Rightarrow k=7$$

$\dfrac{a}{b}=7 \rightarrow a=7b$, $\dfrac{c}{d}=7 \rightarrow c=7d$

$\Rightarrow \dfrac{a.c}{b.d}=\dfrac{7\cancel{b}.7\cancel{d}}{\cancel{b}\cancel{d}}=7.7=49$

Cevap: D

9.

		1	1	
		A	B	C
–		B	B	D
		3	9	4

$C+10-D=4$

$\boxed{D-C=6}$

$A-1-B=3$

$\boxed{A-B=4}$

• $AD-BC=10A+D-10B-C$

$=10(A-B)+D-C$

$=10.4+6$

$=40+6=46$

Cevap: E

10. • $3^{\frac{1}{6}}+1=a \Rightarrow 3^{\frac{1}{6}}=a-1$

• $\left(3^{\frac{1}{6}}\right)^2=(a-1)^2 \Rightarrow 3^{\frac{1}{3}}=(a-1)^2$

$$\frac{3^{\frac{1}{3}}-1}{\left(3^{\frac{1}{12}}-1\right)\left(3^{\frac{1}{12}}+1\right)}=\frac{3^{\frac{1}{3}}-1}{3^{\frac{1}{6}}-1}=\frac{(a-1)^2-1}{a-1-1}$$

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

Cevap: A

11. $\dfrac{2x+1}{x+3}-\dfrac{1}{x+1}=\dfrac{x-2}{x+3}+\dfrac{x-3}{x+1}$

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

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

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

$$1=\frac{x-2}{x+1}$$

$$x+1=x-2$$

$$0=-3 \Rightarrow CK=\varnothing$$

Cevap: D

12.

$$\begin{array}{rr} & ab=c+12 \\ + & ca=b+4 \\ \hline & ab+ac=b+c+16 \end{array}$$

$a(b+c)=b+c+16$ $\quad \left(\boxed{c+b=4} \Rightarrow c=4-b\right)$

$a.4=4+16$

$4a=20$

$a=5$

Cevap: E

13. $x + \sqrt{x^2-5x+7+\sqrt{x^2-4x+4}} + 2 + x$

$= x + \sqrt{x^2-5x+7+\sqrt{(x-2)^2}} + 2 + x$

$= x + \sqrt{x^2-5x+7+|x-2|} + 2 + x$

$= x + \sqrt{x^2-5x+7-x+2} + 2 + x$

$= x + \sqrt{x^2-6x+9} + 2 + x$

$= x + \sqrt{(x-3)^2} + 2 + x$

$= x + |x-3| + 2 + x$

$= x - x + 3 + 2 + x$

$= x + 5$

Cevap: E

14. $\sqrt[3]{2^5\sqrt{x}} = \sqrt[3]{2}.\sqrt[5]{3}$

$\sqrt[3.5]{x.2^5} = \sqrt[15]{2^5.3^3}$

$x.2^5 = 2^5.3^3$

$x = 3^3$

Cevap: E

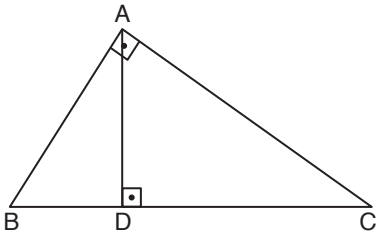
15. • $a + b = 8$
$6 \quad 2$

• $\frac{a}{b} + 1 = c \Rightarrow \frac{6}{2} + 1 = c$

$3 + 1 = c = 4$

Cevap: C

16.



$\Rightarrow |AD|^2 = |BD|.|DC|$

• $|BD|^2 + 2|AD|^2 + |DC|^2 = 100$

$|BD|^2 + 2|BD|.|DC| + |DC|^2 = 100$

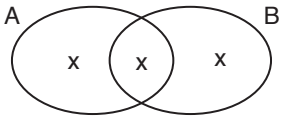
$(|BD| + |DC|)^2 = 100$

$|BD| + |DC| = 10$

$|BC| = 10$

Cevap: C

17. $n = (A - B) = n(B - A) = n(A \cap B) = x$



$\Rightarrow \quad n(A \cup B) = 3x = 24$

$x = 8$

$n(A) = 2x = 2.8 = 16$

Cevap: D

18. $\frac{1}{\log_3 9 + \log_3 2} + \frac{1}{\log_2 2 + \log_2 9} + \frac{1}{\log_3 18}$

$= \frac{1}{\log_3 9.2} + \frac{1}{\log_2 2.9} + \log_{18} 3$

$= \frac{1}{\log_3 18} + \frac{1}{\log_2 18} + \log_{18} 3$

$= \log_{18} 3 + \log_{18} 2 + \log_{18} 3$

$= \log_{18} 3.2.3 = \log_{18} 18 = 1$

Cevap: C

19. $x = -2 \Rightarrow g(x) = 3 - f(x - 2)$

$g(-2) = 3 - f(-4) = 3 - 0 = 3$

$x = 5 \Rightarrow g(x) = 3 - f(x - 2)$

$g(5) = 3 - f(3) = 3 - 3 = 0$

$\Rightarrow g(-2) + g(5) = 3 + 0 = 3$

Cevap: E

20. • $f(3) = 3^2 - 3 + 2 = 8$

$g(2) = 2^2 - 1 = 3$

$\Rightarrow \underbrace{(gof)(3)}_{8} + \underbrace{(fog)(2)}_{3}$

$= g(8) + f(3)$

$= 3.8 - 2 + 3^2 - 3 + 2$

$= 24 - 2 + 9 - 3 + 2$

$= 30$

Cevap: E

Diğer Sayfaya Geçiniz.

21. $\dfrac{f(x+2)}{f(x-2)} = \dfrac{2^{2(x+2)+1}}{2^{2(x-2)+1}} = \dfrac{2^{2x+4+1}}{2^{2x-4+1}} = \dfrac{2^{2x+5}}{2^{2x-3}}$

$= 2^{2x+5-2x+3} = 2^8 = 256$

Cevap: E

22. • $R(x) = x^2 - 1 \Rightarrow R(R(x)) = (x^2-1)^2 - 1$

$R(R(x)) = x^4 - 2x^2 + 1 - 1$

$= x^4 - 2x^2$

• $P(x) = R(R(x))$

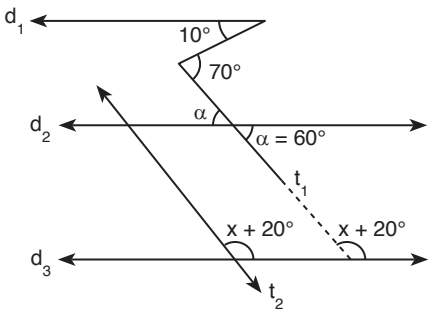
$ax^4 + bx^3 + cx^2 + dx + e = x^4 - 2x^2$

$\Rightarrow a = 1, \quad b = 0, \quad c = -2, \quad d = 0, \quad e = 0$

$a + b + c + d + e = 1 + 0 - 2 + 0 + 0 = -1$

Cevap: C

23.



$70° = 10° + \alpha$

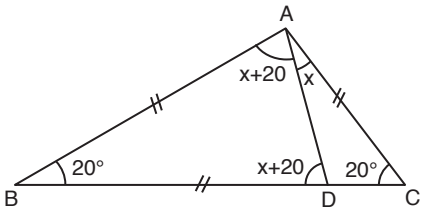
$\alpha = 60°$

$x + 20° + 60° = 180°$

$x = 100°$

Cevap: B

24.



$|AB| = |AC|$

$\Rightarrow m(\widehat{ABC}) = m(\widehat{ACB}) = 20°$

$|AB| = |BD| \Rightarrow m(\widehat{BAD}) = m(\widehat{ADB}) = x + 20$

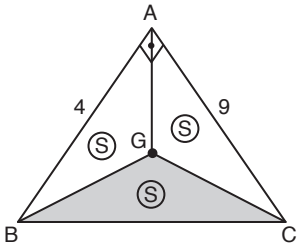
$\Rightarrow 20 + x + 20 + x + 20 = 180$

$2x = 120$

$x = 60°$

Cevap: D

25.



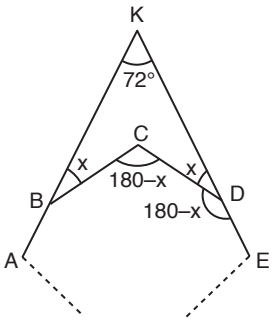
$3S = \dfrac{4.9}{2}$

$3S = 18$

$S = 6\ cm^2$

Cevap: A

26.



$\Rightarrow 72 + x + x = 180 - x$

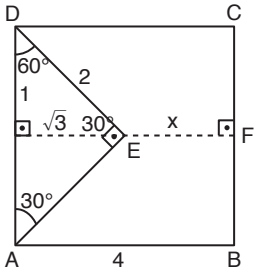
$3x = 108$

$x = 36°$

$\Rightarrow$ Kenar Sayısı $= \dfrac{360°}{x} = \dfrac{360}{36} = 10$'dur.

Cevap: C

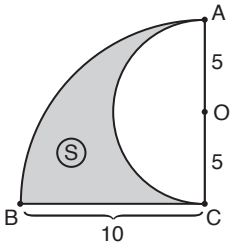
27.



$x + \sqrt{3} = 4 \Rightarrow x = 4 - \sqrt{3}$

Cevap: B

29.



$$\text{Taralı Alan} = \frac{\pi 10^2}{4} - \frac{\pi 5^2}{2}$$

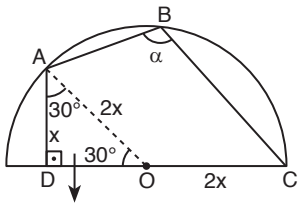
$$= 25\pi - \frac{25\pi}{2}$$

$$= \frac{50\pi - 25\pi}{2}$$

$$= \frac{25\pi}{2}\ cm^2$$

Cevap: A

28.

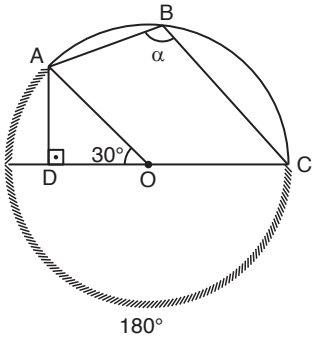


$$2\frac{|AD|}{x} = \frac{|OC|}{2x}$$

$|AD| = x$ ve $|AO| = 2x \Rightarrow$ ise

(30° – 60° – 90°) $m(\widehat{DAO}) = 60°$ ve

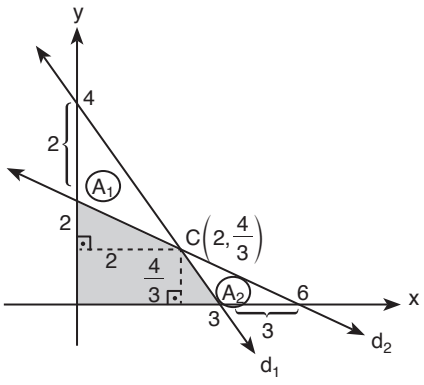
$m(\widehat{DOA}) = 30°$ olur.



$$\Rightarrow \alpha = \frac{30 + 18}{2} = 105°$$

Cevap: E

30.



$d_1: \frac{x}{3} + \frac{y}{4} = 1 \Rightarrow 4x + 3y = 12$

$d_2: \frac{x}{6} + \frac{y}{2} = 1 \Rightarrow -x + 3y = 6$

$3x = 6$

$x = 2$

$y = \frac{4}{3}$

$A_1 = \frac{2.2}{2 = 2}$

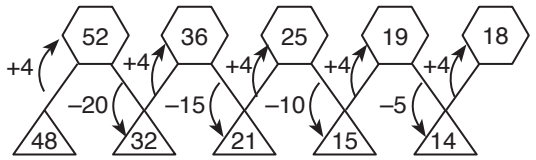
$\Rightarrow A_1 + A_2 = 4$

$A_2 = \frac{3.\frac{4}{3}}{2} = 2$

Cevap: C

Diğer Sayfaya Geçiniz.

31.



A + B = 14 + 18 = 32 bulunur.

Cevap: D

32. $n^2 + (n + 1)$ ifadesi kullanılmış.

2. ⟶ $2^2 + (2 + 1) = 7$

3. ⟶ $3^2 + (3 + 1) = 13$

⋮

6. ⟶ $6^2 + (6 + 1) = 43$

7. ⟶ $7^2 + (7 + 1) = 57$

8. ⟶ $8^2 + (8 + 1) = 73$

O halde,

1. ⟶ $X = 1^2 + (1 + 1) = 3$

20. ⟶ $Y = 20^2 + (20 + 1) = 421$

Y – X = 421 – 3 = 418 bulunur.

Cevap: D

33. I. tablodan

a + c = 13

II. tablodan

$$\begin{array}{rl} & a.b = 18 \\ + & b.c = 8 \\ \hline & b\underbrace{(a+c)}_{13} = 26 \end{array}$$

b = 2

a.2 = 18 ⇒ a = 9

2.c = 8 ⇒ c = 4

O halde

a.b.c = 9.2.4 = 72 bulunur.

Cevap: E

34. ● → a, ▲ → b, ■ → c

a + b = c

a – b = b ⇒ a = 2b

2b + b = c ⇒ c = 3b

O halde

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

= 5 bulunur.

Cevap: E

35. a^2 ● 2b = a – b

$a \blacksquare b = \frac{a.b}{2}$

9 ● 2 = ?

$a^2 = 9 \Rightarrow a = 3$ ve $2b = 2 \Rightarrow b = 1$

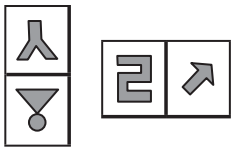
9 ● 2 = 3 – 1 = 2

2 ■ 3 = ?

$2 \blacksquare 3 = \frac{2.3}{2} = 3$ bulunur.

Cevap: D

36. I. ve II önreklemelerden



Cevap: C

37. 5 x 5'lik bir şeklimiz bulunmakta

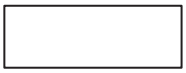
5 x 5	4 x 4	3 x 3	2 x 2	1 x 1	(Kare Çeşitleri)
1 x 1	2 x 2	3 x 3	4 x 4	5 x 5	(Kare sayısı)
↓	↓	↓	↓	↓	
1	+ 4	+ 9	+ 16	+ 25	= 55 tane kare var.

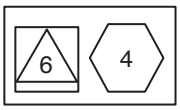
Cevap: E

38.  → içindekinin 2 katı = 2a

 → içindekinin üçte biri = $\frac{b}{3}$

 → içindekinin yarısı = $\frac{c}{2}$

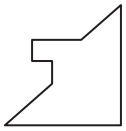
 → içindekilerin toplamı

 → ?

$\frac{6}{\frac{3}{2}} + 2.4 = 1 + 8 = 9$

Cevap: D

39. Şekli tamamlayan



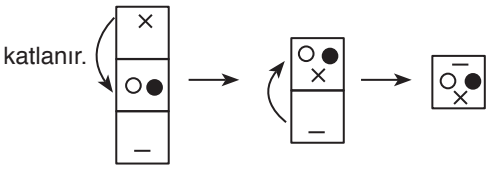
Cevap: B

40. 6.2 + 4 = 16

2.2 + 1 = 5

3.4 + 2 = 14

Cevap: D

41. 

Cevap: C

42. 

Cevap: C

43. 

Cevap: B

44. Tablodaki adetler olarak grafik tablosunda gösterilmiş

O halde ●

K → 4 adet

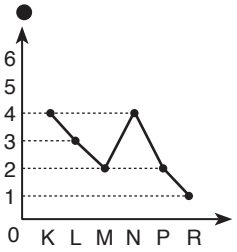
L → 3 adet

M → 2 adet

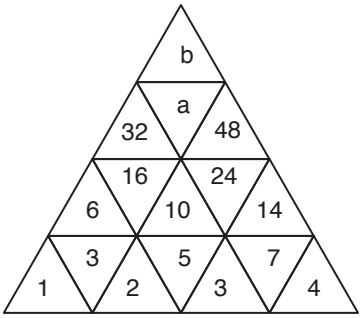
N → 4 adet

P → 2 adet

R → 1 adet



Cevap: C

45. 

a = 32 + 48 = 80

b = 32 + 48 + 80 = 160

Cevap: B

46. Her basamakta bulunan ❋ = 5

❋ ○ ⬡ ◇ → 5612'den

○ → 6, ⬡ → 1, ◇ → 2

◇ △ □ ❋ → 2345 olur.

Cevap: D

Diğer Sayfaya Geçiniz.

47. 

Bu durumda

Cevap: A

48. I.

$(\text{Yıldız Sayısı})^{\text{Daire Sayısı}} + \text{Kenar Sayısı}$

$(3)^3 + 5 = 27 + 5 = 32$

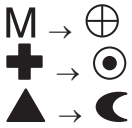
II.

$2^6 + 3 = 64 + 3 = 64$

III.

$4^2 + 8 = 16 + 8 = 24$

Cevap: B

49. 

O halde

Cevap: A

50. Şekilden

1, 5, 9, …, 217 iadesinin terim sayısını bulalım.

$$T.S = \frac{217-1}{4} + 1 = 55$$

Sol taraf 2n + 1, sağ taraf 2n ifadesi

O halde

A = 2n + 1 = 2.55 + 1 = 111

B = 2n = 2.55 = 110

A + B = 111 + 110 = 221 bulunur.

Cevap: C

51.

	1	2
1. satır → 1 x 1 → 2 x 0	1	0
2. satır → 1 x 1 → 2 x 2	1	2
3. satır → 1 x 2 → 2 x 3	2	3
4. satır → 1 x 3 → 2 x 4	3	4
⋮	⋮	⋮

2'den 209 tane var ise

① + 2 + 3 + 4 + … + n = 209 + ① eklediğimizde

$$\frac{n.(n+1)}{2} = 210$$

$$n \;.\; (n+1) = 420$$

$$\downarrow \quad \downarrow$$

$$20 \quad 21$$

yani n = 20 satırdan oluşmakta 1'lerin ardışık sırası 19'a kadar olur.

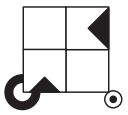
O halde 1'lerden

$$\underbrace{1 + 1 + 2 + 3 + \ldots + 19}_{} = \frac{20.19}{2}$$

$$= 190 + 1 = 191 \text{ tane}$$

Cevap: C

52. Şekil 90 derece saat yönünün tersine çevrilmekte

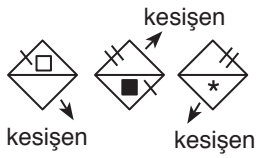


Cevap: B

53. 

Cevap: B

54. Üst üste konulmakta



Cevap: C

55. Her bir dikdörtgen üstünde

$3 \rightarrow \bigcirc$, $2 \rightarrow \triangle$, $\square \rightarrow 1$ ve $\blacksquare \rightarrow 1$

tane bulunmakta

O halde

$\bigcirc$ x 54 ise 54 : 3 = 18 tane grup oluşturulmuş

$\triangle$ x 2.18 = 36 tane = A

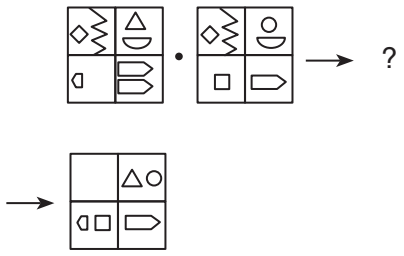
$\square$ x 1.18 = 18 tane = B

$\blacksquare$ x 1.18 = 18 tane = C

A + B + C = 36 + 18 + 18 = 72 bulunur.

Cevap: D

56. Üst üste konulup ortak olanlar siliniyor.



Cevap: B

57. Kesişen iki şeklin görseli

Cevap: E

58. Katlanıp kesilmiş şeklin açık hali

Cevap: E

59.

Cevap: E

60. ▲ = a , ■ = b , ● = c

4a = b

3c + 3a = 2b = 8a

3c = 5a

$\frac{a}{b} = \frac{1.3k}{4.3k} = \frac{3k}{12k}$ ve $\frac{c}{a} = \frac{5k}{3k}$

a = 3k, b = 12k, c = 5k

seçeneklerden 15k arıyoruz.

a + b = 3k + 12k = 15k

●●●

Cevap: B

61.

şekli tamamlayan A seçeneği

Cevap: A

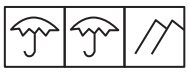
62. B = 64 – 26 = 38

$A = \frac{10}{2} + 26 = 31$

A + B = 38 + 31 = 69

Cevap: C

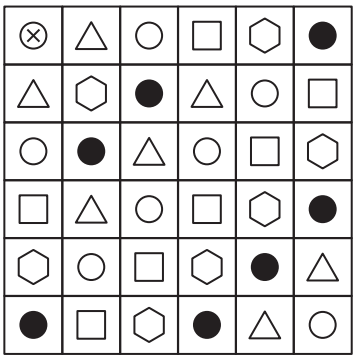
63.



Cevap: A

Diğer Sayfaya Geçiniz.

64.



[(△⊗⬡) ⊗ ?] ⊗ (□⊗□) = □

○⊗ ? ⊗ □

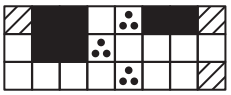
□

olması için ? = ⬡ olmalı seçeneklerden C

● ⊗ ○ = ⬡ olmakta

Cevap: C

65.



Cevap: E

66. Her bir şekil 60° olduğu görülmekte

VI'da 2 tane ▲ → 120°

2 tane ✳ → 120°

2 tane ◈ → 120°

Cevap: E

67.

4		5

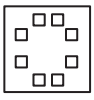
4 + 5

9 olmalı O halde

3 + K = 9 ⇒ K = 6 olur.

Cevap: D

68.



Cevap: B

69. $8 \xrightarrow{3} A = \frac{1+2+3+\ldots+8}{3^8} = \frac{36}{3^8}$

$4 \xrightarrow{9} B = \frac{1+2+3+4}{9^4} = \frac{10}{3^8}$

$\frac{A}{B} = \frac{\frac{36}{3^8}}{\frac{10}{3^8}} = \frac{36}{\cancel{3^8}} \cdot \frac{\cancel{3^8}}{10}$

$= \frac{18}{5}$ bulunur.

Cevap: B

70. Tablodan tersten işlem önce satır daha sonra sütun kesişim.

N K L L N R L R M N olur.

Cevap: A

71.

		3			
		3 + x			
		3 + 3x			
		3 + 5x			
A	A + y	3 + 7x			54
		3 + 9x			
		3 + 11x			

3 + 7x = 24

3 + 11x = 36

11x = 33

x = 3

A + 9y = 54

↓ ↓

9 5

A + 3y = 24

↓ ↓

9 5

A = 9 bulunur.

Cevap: E

72. [114, 19] (x6) ↔ [184, 23] (x8) ↔ [270, 27] (x10) ↔ [x, y] (12)

C) 31 x 12 = 372

Cevap: C

73. $654 \xrightarrow{(6.5)-4} 26$

$783 \xrightarrow{(7.8)-3} 53$

$925 \xrightarrow{(9.2)-5} 13$

$372 \xrightarrow{(3.7)-2} 19$

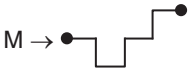
Cevap: C

74. I. $\sqrt{1+8+6+5+3+2} = \sqrt{25} = 5$

II. $\sqrt{11+13+6+5+9+20} = \sqrt{64} = 8$

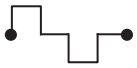
$\sqrt{25+2+12+33+11+17} = \sqrt{100} = 10$

Cevap: D

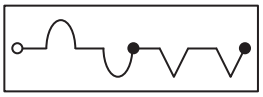
75. M → 

N → 

K → 

L → 

P → 



Cevap: B

76. Ardışık sayılardan hareketle

1. → 3
2. → 8
3. → 13
4. → 18
⋮
25. → x

Artış miktarı = 5

$$\text{Terim Sayısı} = \frac{\text{Son Terim} - \text{İlk Terim}}{\text{Artış Miktarı}} + 1$$

$$25 = \frac{x-3}{5} + 1$$

$$24 = \frac{x-3}{5}$$

$x - 3 = 120$

$x = 123$ bulunur.

Cevap: D

77. C E 3 D → 3 E C D

K 9 L E → L 9 E K

M A 5 R → 5 A R M → R A 5 M

Cevap: B

78. 

Cevap: C

79.

22	25	23	26	24
23	26	24	27	25
21	24	22	25	23
22	25	23	26	24
20	23	21	24	22

? → 24 olur.

Cevap: E

80. $\frac{12.4}{8.2} = 3$, $\frac{9.6}{3.2} = 9$,

$\frac{A.8}{10.3} = 4$, $\frac{36.4}{1.9} = 16$

$\Rightarrow$ A.8 = 120

A = 15 bulunur.

Cevap: A

Diğer Sayfaya Geçiniz.