Deneme Sınavı
Trial Exam

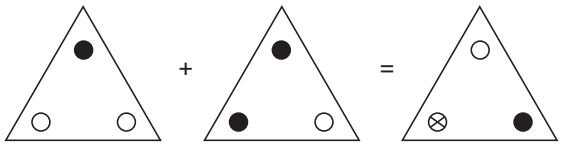
8

ÇÖZÜMLER

TAMAMI VİDEO ÇÖZÜMLÜ

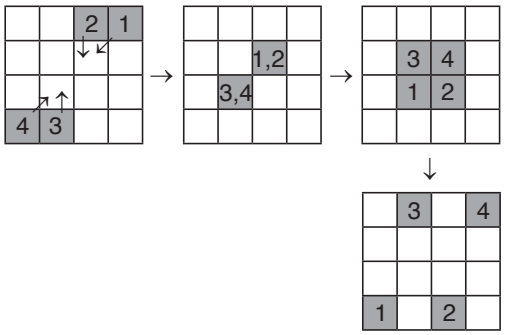
VİDEO ÇÖZÜM UYGULAMASI İÇİN

1. ○ + ○ = ● , ○ + ● = ● + ○ = ⊗ ,
● + ● = ○



Cevap: C

2.



Cevap: D

3.

I.	II.	III.	IV.
5	7	4	9
3	6	2	8
16	13	12	**x**

I. $5^2 - 3^2 = 16$

II. $7^2 - 6^2 = 13$

III. $4^2 - 2^2 = 12$

IV. $9^2 - 8^2 = 17$

Cevap: C

4. A = 5 , E = 2 , D = 4 , K = 1 , N = 6 , R = 3

⇒ KENE = 1262

Cevap: A

5. A = 2 , E = 4 , D = 5 , F = 7 , K = 6 ,
L = 1 , N = 8 , R = 3

⇒ DEKAR = 54623

Cevap: C

6. ▽ = 1 , ⊗ = 2 , ⊞ = 3 , Ψ = 4 , ● = 5 , ⏃ = 6

⇒ ⊗⏃⊞ = 263

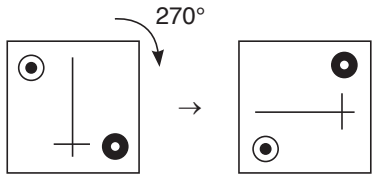
Cevap: B

7. △ = 1 , ○ = 2 , □ = 3 , ⎔ = 4 , Φ = 5 , ✶ = 6
★ = 7 , ▲ = 8

⇒ □Φ△○ = 3512

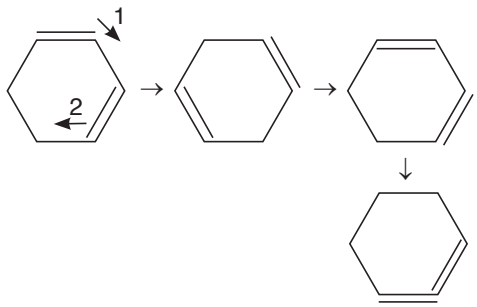
Cevap: C

8.



Cevap: E

9.



Cevap: E

10. $\underbrace{(E \square B)}_{C} \square \underbrace{(A \square C)}_{E} = D$

Cevap: D

11. $A \square \underbrace{(A \square x)}_{A} = C$

$A \square x = A \Rightarrow x = D$

Cevap: D

12. $5 \triangle \underbrace{(-3 \triangle -2)}_{(-3 \le -2)} = 5 \triangle ((-3).(-2) - 3)$

$= 5 \triangle 3 = 5^2 - 2.3.5$

$= 25 - 30 = -5$

Cevap: A

Diğer Sayfaya Geçiniz.

13. $\frac{1}{a^3} = 8 \Rightarrow a = \frac{1}{2}$

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

$\Rightarrow 8 \oplus 3 = 6.\frac{1}{2}.5 - 5$

$= 10$

Cevap: B

14. $(3,2) \ast [(3,5) \star (3,3)]$

$= (3,2) \ast \left[\left(\frac{3+3}{5-3}, \frac{3+3}{5-3}\right)\right]$

$= (3,2) \ast (3,3)$

$= (3.3 - 2 , 2.3 - 3) = (7,3)$

Cevap: A

15. $2c = 14 \Rightarrow c = 7$

$\left.\begin{matrix} 2a = b + 1 \\ b + c = 4a \end{matrix}\right\} \Rightarrow \left.\begin{matrix} 2a - b = 1 \\ 4a - b = 7 \end{matrix}\right\} \Rightarrow \begin{matrix} a = 3 \\ b = 5 \end{matrix}$

Cevap: A

16. $a.c = c^2 + c \Rightarrow a = c + 1$

$\frac{\not{b}.c}{a.\not{b}} = \frac{a+3}{2c+2} \Rightarrow \frac{c}{c+1} = \frac{c+4}{2c+2}$

$\Rightarrow c = 4$

$\Rightarrow b = 2$

$\Rightarrow a = 5$

$+$

$a + b + c = 11$

Cevap: C

17. $b.c = 6b \Rightarrow c = 6$

$a + b = c + 6 \Rightarrow \quad a + b = 12$

$a + c = b \Rightarrow \quad +\ \ b - a = 6$

$2b = 18 \Rightarrow b = 9 , a = 3$

Cevap: C

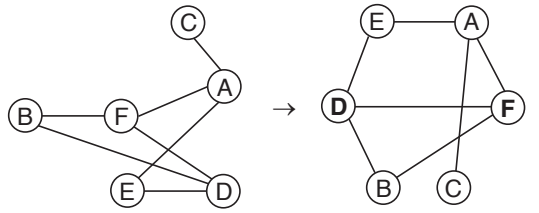
18. $\frac{1^2 + 4^2 + 7^2}{3} = \frac{66}{3} = 22$

$\frac{0^2 + 6^2 + 9^2}{3} = \frac{117}{3} = 39$

$\frac{4^2 + 5^2 + 8^2}{3} = \frac{105}{3} = 35 \Rightarrow x = 35$

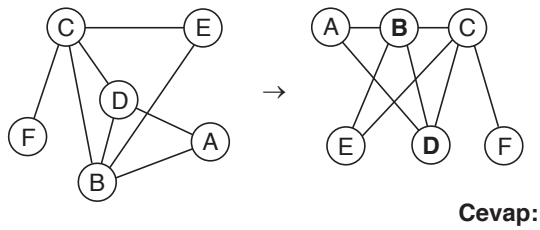
Cevap: C

19.



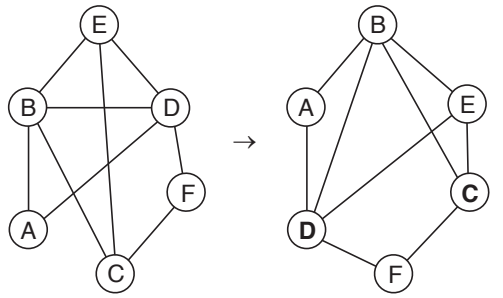
Cevap: B

20.



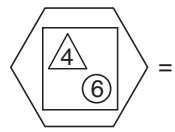
Cevap: B

21.



Cevap: D

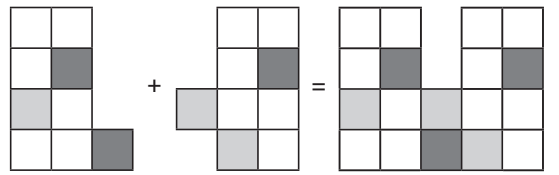
22.



$= \frac{3.4 + 6^2}{4} = 12$

Cevap: E

23.



Cevap: A

24. I. $\square\triangle\triangle = \bigcirc\bigcirc\bigcirc\square \Rightarrow \triangle\triangle = \bigcirc\bigcirc\bigcirc$

$\Rightarrow \triangle = 3k$

$\bigcirc = 2k$

II. $\square\square\bigcirc = \triangle\triangle\triangle\triangle \Rightarrow \square\square\bigcirc = \triangle\triangle\triangle\triangle$

$\downarrow \quad \underbrace{\quad\quad}$

$2k \quad 12k$

$\Rightarrow \square\square = 10k$

$\Rightarrow \square = 5k$

III. $\triangle\bigcirc = 3k + 2k = 5k = \square$

Cevap: A

25. II. ○○○○○ = △△△ ⇒ ○ = 3k

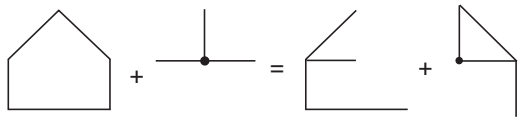
△ = 5k

I. △○○○ = □□ ⇒ □ = 7k

III. □△○ = 15k = △△△

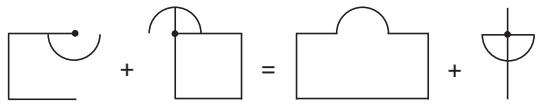
Cevap: C

26.



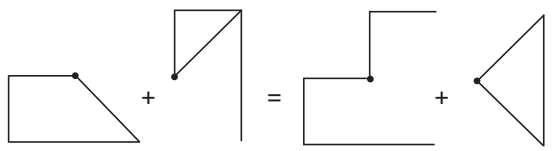
Cevap: E

27.



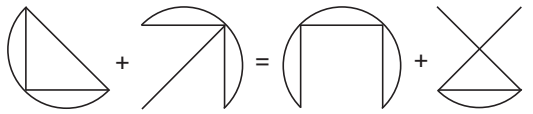
Cevap: E

28.



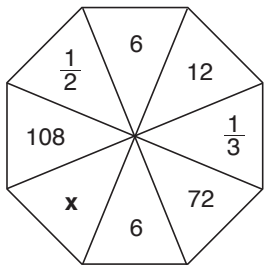
Cevap: B

29.



Cevap: D

30.



6.6 = 36

$72.\frac{1}{2} = 36$

$\frac{1}{3} . 108 = 36$

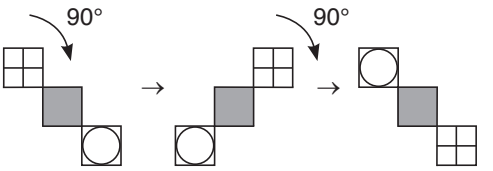
12.x = 36 ⇒ x = 3

Cevap: D

31. 3. sütunda (At the third column)

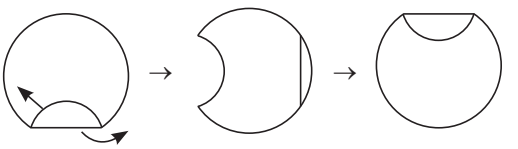
Cevap: B

32. 3. sütunda (At the third column)



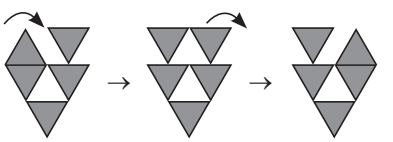
Cevap: C

33. 2. sütunda (At the third column)



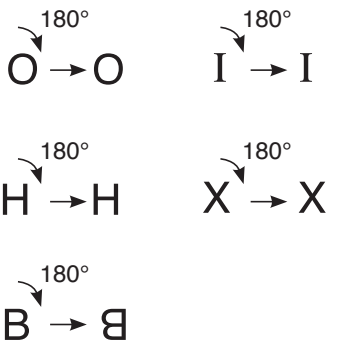
Cevap: B

34. 3. sütunda (At the third column)



Cevap: A

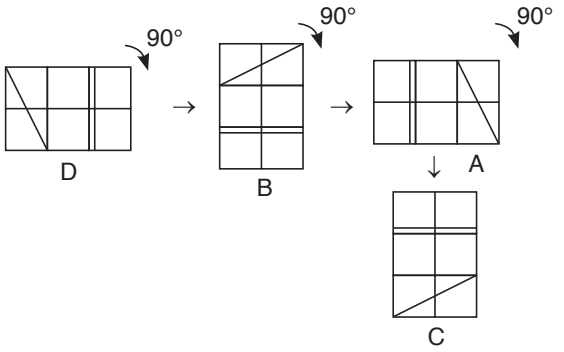
35.



Cevap: B

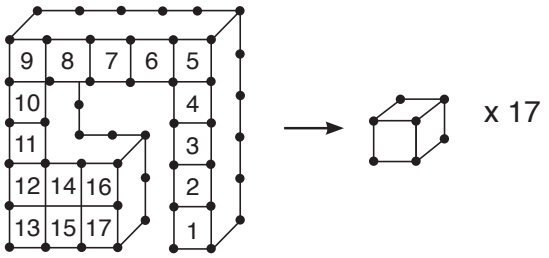
Diğer Sayfaya Geçiniz.

36.



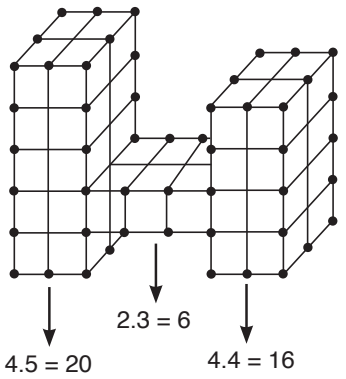
Cevap: E

37.



Cevap: D

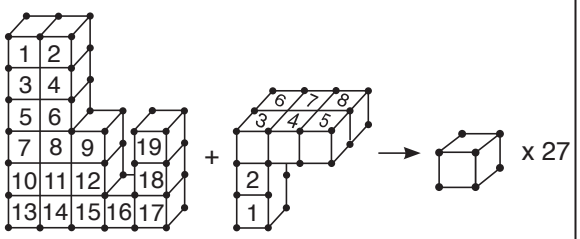
38.



$20 + 16 + 16 = 42$

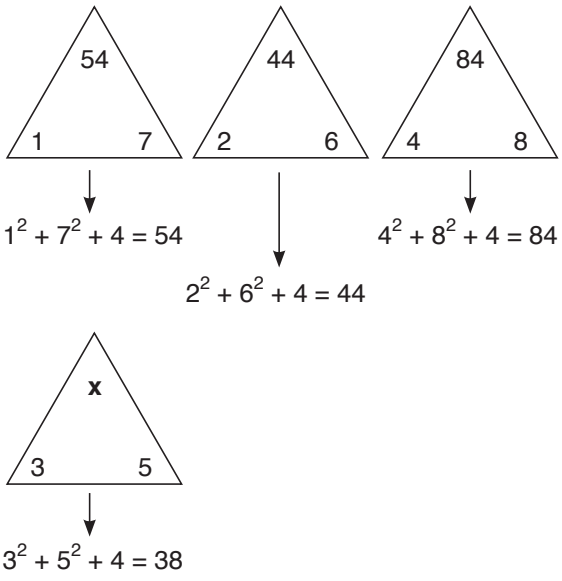
Cevap: B

39.



Cevap: A

40.



Cevap: C

41. $-4,\ \underset{+7}{3},\ \underset{+10}{13},\ \underset{+13}{26},\ \underset{+16}{42},\ \underset{+19}{x}$

Cevap: B

42. $\frac{x-1}{4} + 1 = 60$

$\frac{x-1}{4} = 59 \Rightarrow x - 1 = 236$

$x = 237$

Cevap: B

43. $\overset{+5}{\frown}\ \overset{+5}{\frown}\ \overset{+5}{\frown}$

$2,\ 3,\ 4,\ 8,\ 8,\ 13,\ 16,\ x,\ 32,\ 23, \ldots$

$\underset{x2}{\smile}\ \underset{x2}{\smile}\ \underset{x2}{\smile}\ \underset{x2}{\smile}$

Cevap: D

44. $\begin{vmatrix} x_1 & x_2 & x_3 \\ x_4 & x_5 & x_6 \\ x_7 & x_8 & x_9 \end{vmatrix} = A \Rightarrow \begin{vmatrix} x_1 & x_4 & x_7 \\ x_2 & x_5 & x_8 \\ x_3 & x_6 & x_9 \end{vmatrix} = A$

$$\Rightarrow \begin{vmatrix} x_7 & x_8 & x_9 \\ x_4 & x_5 & x_6 \\ x_1 & x_2 & x_3 \end{vmatrix} = -A$$

$$+ \quad \overline{\qquad\qquad} \quad 0$$

Cevap: C

45. $\begin{bmatrix}3 & 1\\ 1 & 0\end{bmatrix}^{-1} = \frac{1}{-1}\cdot\begin{bmatrix}0 & -1\\ -1 & 3\end{bmatrix}$

$= \begin{bmatrix}0 & 1\\ 1 & -3\end{bmatrix}$

$[1\ \ 1].\begin{bmatrix}0 & 1\\ 1 & -3\end{bmatrix}.\begin{bmatrix}-3\\ -2\end{bmatrix} = [1\ \ -2].\begin{bmatrix}-3\\ -2\end{bmatrix}$

$= 1$

Cevap: A

46. $\left[\frac{3}{4}:\left(\frac{1}{2}\cdot\frac{5}{3}\right)\right]:\frac{5}{6}$

$= \left[\frac{3}{4}:\frac{5}{6}\right]:\frac{5}{6} = \left[\frac{3}{4}\cdot\frac{6}{5}\right]:\frac{5}{6}$

$= \frac{9}{10}\cdot\frac{6}{5} = \frac{27}{25}$

Cevap: B

47. $\frac{12}{5^{-3}+4.5^{-3}+4.5^{-2}+14.5^{-1}}$

$= \frac{12}{\underbrace{5^{-2}+4.5^{-2}}_{5^{-1}}+14.5^{-1}}$

$= \frac{12}{5^{-1}+14.5^{-1}} = \frac{12}{15.5^{-1}}$

$= \frac{12}{3} = 4$

Cevap: D

48. $\frac{0,15}{0,25}\cdot\frac{0,9}{0,2}:\frac{2,4}{8}$

$= \frac{15}{25}\cdot\frac{9}{2}\cdot\frac{80}{24} = \frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{5}}}\cdot\frac{9}{2}\cdot\frac{\overset{2}{\cancel{10}}}{\underset{1}{\cancel{3}}}$

$= 9$

Cevap: A

49. $\frac{2}{\sqrt{2}-1}+\frac{2}{\sqrt{2}-2}-\frac{1}{\sqrt{2}}$

$= \frac{2}{\sqrt{2}-1}-\frac{2}{\sqrt{2}(\sqrt{2}-1)}-\frac{1}{\sqrt{2}}$

$= \frac{2-\sqrt{2}}{\sqrt{2}-1}-\frac{1}{\sqrt{2}} = \frac{\sqrt{2}(\sqrt{2}-1)}{(\sqrt{2}-1)}-\frac{1}{\sqrt{2}}$

$= \sqrt{2}-\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

Cevap: A

50. $\left(\sqrt{\frac{5}{18}}\right)^{-1}+5.\left(\sqrt{\frac{5}{2}}\right)^{-3} = \frac{\sqrt{18}}{\sqrt{5}}+5.\left(\frac{\sqrt{2}}{\sqrt{5}}\right)^{3}$

$= \frac{3\sqrt{2}}{\sqrt{5}}+\cancel{5}.\frac{2\sqrt{2}}{\cancel{5}\sqrt{5}}$

$= \frac{5\sqrt{2}}{\sqrt{5}} = \sqrt{10}$

Cevap: C

51. $|x-3|+|3x-5| = 12$

$|x-3|+3|x-3| = 12 \Rightarrow 4|x-3| = 12$

$\Rightarrow |x-3| = 3$

$x-3=3 \qquad x-3=-3$

$x=6 \qquad x=0\ ,\ x>0 \Rightarrow x=6$

Cevap: E

52. $\frac{36}{8-\frac{4}{3-\frac{x}{2}}} = 3 \Rightarrow 8-\frac{4}{3-\frac{x}{2}} = 12$

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

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

$\Rightarrow \frac{x}{2} = 4 \Rightarrow x = 8$

Cevap: D

53. $\frac{(x-y)(x+y)-(x-y)}{(x-y)}-x+y$

$= \frac{\cancel{(x-y)}(x+y-1)}{\cancel{(x-y)}}-x+y$

$= x+y-1-x+y = 2y-1$

Cevap: C

54. $\frac{x-A}{x+3}+\frac{x-B}{x-4} = \frac{2x^2-4x-16}{x^2-x-12}$

$(x-4) \qquad (x+3)$

$\frac{x^2-Ax-4x+4A+x^2-Bx+3x-3B}{x^2-x-12}$

$= \frac{2x^2-4x-16}{x^2-x-12}$

$2x^2-(A+B+1)x+4A-3B = 2x^2-4x-16$

$\Rightarrow A+B=3\ ,\quad 4A-3B=-16$

$+\ -4A-4B=-12$

$-7B=-28$

$B=4$

Cevap: B

Diğer Sayfaya Geçiniz.

55. • $x^2 + x + 1 = 0$

$x^2 = -x - 1$

• $x^3 - x = x(x^2 - 1)$

$= x(-x - 1 - 1)$

$= x(-x - 2)$

$= -x^2 - 2x$

$= -(-x - 1) - 2x$

$= x + 1 - 2x$

$= 1 - x$

Cevap: B

56. $(f^{-1}og)(x) = \log_3^{\sqrt{x}}$

$\Rightarrow f(\log_3^{\sqrt{x}}) = g(x)$

$\log_3^{\sqrt{x}} = y \Rightarrow x = 9^y$

$f(\log_3^{\sqrt{9^x}}) = g(9^x)$

$f(x) = \log_2^{9x+1}$

Cevap: E

57. $\frac{\log x}{\log 3} + \frac{\log x}{\log 3^2} + \frac{\log x}{\log 3^3} = \frac{11}{3}$

$\frac{\log x}{\log 3} + \frac{\log x}{2\log 3} + \frac{\log x}{3\log 3} = \frac{11}{3}$

(6) (3) (2)

$\frac{11.\log x}{6.\log 3} = \frac{11}{3} \Rightarrow \log x = 2.\log 3$

$\log x = \log 9$

$\Rightarrow x = 9$

Cevap: B

58. $2\log_3 x - \log_3 y = \log_3 5 - \log_3 3$

$\log_3 \frac{x^2}{y} = \log_3 \frac{5}{3}$

$(x = 3y) \Rightarrow \frac{9y^2}{y} = \frac{5}{3} \Rightarrow y = \frac{5}{27}$

$\Rightarrow \log_3 \frac{y}{5} = \log_3 \left(\frac{\frac{5}{27}}{5}\right) = \log_3 \frac{1}{27}$

$= \log_3^{3^{-3}} = -3$

Cevap: C

59. $f(40) = f(10.4) = \frac{f(10)}{4} = 30$

$\Rightarrow f(10) = 120$

$f(50) = \frac{f(10)}{5} = \frac{120}{5} = 24$

Cevap: B

60. $x = \frac{1}{2} \Rightarrow f(1) + 2.f(-1) = 2$

$x = -\frac{1}{2} \Rightarrow \underline{f(-1) + 2.f(1) = 4}$

$-2f(-1) - 4f(1) = -8$

$\underline{+\ f(1) + 2.f(-1) = 2}$

$-3.f(1) = -6$

$f(1) = 2$

Cevap: D

61. $\lim_{x \to 2^+} f(f(x)) = \lim_{x \to 3^+} f(x) = 2$

$x \to 2^+ \quad f(x) \to 3^+$

Cevap: E

62. $\lim_{x \to 4} \frac{\sqrt{x} - 2}{x - 4} = \lim_{x \to 4} \frac{(\sqrt{x} - 2)}{(\sqrt{x} - 2).(\sqrt{x} + 2)}$

$= \lim_{x \to 4} \frac{1}{\sqrt{x} + 2} = \frac{1}{4}$

Cevap: A

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

$f'(x) = 1 - 1.x^{-2}$

$f''(x) = +2.1.x^{-3}$

$f'''(x) = -3.2.1.x^{-4}$

$f^{(4)}(x) = 4.3.2.1.x^{-5}$

$\vdots \qquad \vdots$

$f^{(100)}(x) = 100!.x^{-101} \Rightarrow f^{(100)}(1) = 100!$

Cevap: A

64. $f(x) = 2x.\log_x e = 2x.\frac{1}{\log_e x}$

$= \frac{2x}{\ln x}$

$\Rightarrow f'(x) = \frac{2.\ln x - 2x.\frac{1}{x}}{(\ln x)^2}$

$\Rightarrow f'(e^2) = \frac{2.\ln e^2 - 2}{(\ln e^2)^2} = \frac{4-2}{4}$

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

Cevap: C

65. $f(x^2) = (x^3 - 2x + 5)^2$

$2x.f'(x^2) = 2.(3x^2 - 2).(x^3 - 2x + 5)$

$(x = \sqrt{2}) \Rightarrow 2\sqrt{2}.f'(2) = 2.4.(2\sqrt{2} - 2\sqrt{2} + 5)$

$2\sqrt{2}.f'(2) = 40 \Rightarrow f'(2) = 10\sqrt{2}$

Cevap: B

66. $f(x) = 2x^2 + ax + 2$

$f'(x) = 4x + a$

$f'(1) = 4 + a = 5$

$a = 1$

Cevap: B

67. $\int \frac{\cos^3 x - \sin^3 x}{\cos x - \sin x} dx$

$= \int \frac{(\cos x - \sin x).(\cos^2 x + \cos x.\sin x + \sin^2 x)}{(\cos x - \sin x)} dx$

$= \int (1 + \cos x.\sin x) dx$

$= \int \left(1 + \frac{\sin 2x}{2}\right) dx = x - \frac{\cos 2x}{4} + c$

Cevap: E

68. Katılan çift sayı x olsun.

O halde x kadın, x erkek katılmıştır.

	Kadın Sayısı		Erkek Sayısı
	44		20
	↓		↓
x çift	44+x	=	2.(20+x)
katılsın	44+x	=	40 + 2x
		4 = x	katılan evli çift

Cevap: B

69. $\int x d(f(x)) = \frac{2x^3}{3} + \frac{x^2}{2}$

$\int x f'(x) dx = \frac{2x^3}{3} + \frac{x^2}{2}$

$x.f'(x) = 2x^2 + x$

$x = 2 \Rightarrow 2.f'(2) = 10 \Rightarrow f'(2) = 5$

Cevap: D

70. Liste fiyatı 100x olsun.

Alış fiyatı %40 eksiği ise %60'a almıştır.

Yani $100x.\frac{60}{100} = 60x$ almıştır.

$60x.\frac{30}{100} = 18x$ (kâr)

$18x = 72$

$x = 4$ O halde bu malı

$60x = 60.4 = 240$ TL'ye almıştır.

Cevap: D

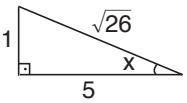
71. $\tan(45 + x) = \frac{3}{2}$

$\Rightarrow \frac{\overbrace{\tan 45}^{1} + \tan x}{1 - \underbrace{\tan 45}_{1}.\tan x} = \frac{3}{2} \Rightarrow \frac{1 + \tan x}{1 - \tan x} = \frac{3}{2}$

$\Rightarrow 2 + 2\tan x = 3 - 3\tan x$

$\Rightarrow 5\tan x = 1$

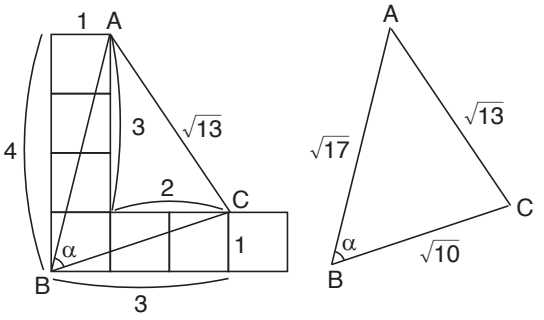
$\Rightarrow \tan x = \frac{1}{5}$



$\Rightarrow \cos x = \frac{5\sqrt{26}}{26}$

Cevap: E

72.



$(\sqrt{13})^2 = (\sqrt{17})^2 + (\sqrt{10})^2 - 2.\sqrt{17}.\sqrt{10}.\cos x$

$\Rightarrow 2.\sqrt{170}.\cos x = 14$

$\Rightarrow \cos x = \frac{7}{\sqrt{170}}$

Cevap: C

Diğer Sayfaya Geçiniz.

73. $z + i.z + 2 = 8i + 4i^2 - 2$

$\Rightarrow z(1 + i) = 8i - 6$

$\Rightarrow z = \frac{(8i - 6)}{(1 + i)} . \frac{(1 - i)}{(1 - i)}$

$\Rightarrow z = \frac{8i - 6 - 8i^2 + 6i}{2}$

$\Rightarrow z = \frac{2 + 14i}{2} = 1 + 7i$

$\Rightarrow \overline{z} = 1 - 7i$

Cevap: B

74. $4A + 2B = \begin{bmatrix} 6 & 16 \\ 4 & 4 \end{bmatrix}$

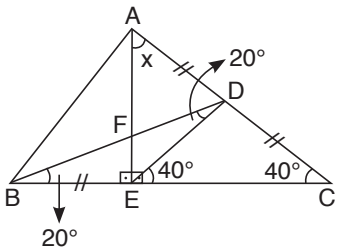
$+ \quad A - 2B = \begin{bmatrix} 4 & -1 \\ 1 & -9 \end{bmatrix}$

$5A = \begin{bmatrix} 10 & 15 \\ 5 & -5 \end{bmatrix}$

$A = \begin{bmatrix} 2 & 3 \\ 1 & -1 \end{bmatrix} \Rightarrow \det(A) = -2 - 3 = -5$

Cevap: A

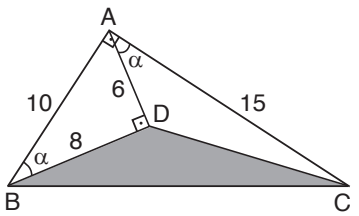
75.



$x = 50$

Cevap: A

76.



$A(ABC) = \frac{10.15}{2} = 75\ br^2$

$A(ABD) = \frac{6.8}{2} = 24\ br^2$

$A(ADC) = \frac{1}{2} \cdot 6 \cdot 15 \cdot \sin\alpha = 27\ br^2$

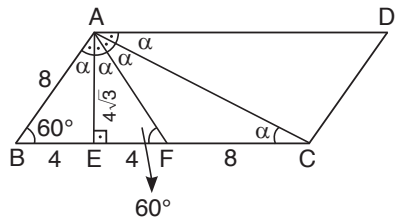
$A(BDC) = A(ABC) - [A(ABD) + A(ADC)]$

$= 75 - [24 + 27]$

$= 24\ br^2$

Cevap: D

77.



$3\alpha = 90°$

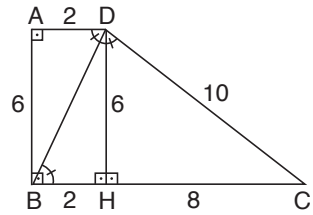
$\alpha = 30°$

$A(ABDC) = (4\sqrt{3}).16$

$= 64\sqrt{3}\ cm^2$

Cevap: B

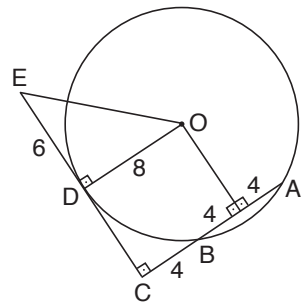
78.



$|AB| = 6$ cm

Cevap: B

79.



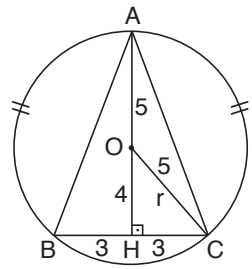
$|OE|^2 = 6^2 + 8^2$

$|OE|^2 = 100$

$|OE| = 10$ cm

Cevap: A

80.



$|OC|^2 = |HC|^2 + |OH|^2$

$25 = 9 + |OH|^2$

$\Rightarrow |OH| = 4$ br

$|AB|^2 = |BH|^2 + |AH|^2$

$|AB|^2 = 9 + 81$

$|AB|^2 = 90 \Rightarrow |AB| = 3\sqrt{10}$

Cevap: D