Deneme Sınavı
Trial Exam

9

ÇÖZÜMLER

TAMAMI VİDEO ÇÖZÜMLÜ

VİDEO ÇÖZÜM UYGULAMASI İÇİN

1. $\triangle = 2k \quad \square = 5k \quad \bigcirc = 6k$

$\Rightarrow \bigcirc = 2k + 2k + 2k = \triangle\triangle\triangle$

Cevap: B

2. $3.8 + 1 = 25$

$8.4 + 1 = 33$

$4.6 + 1 = 25$

$6.7 + 1 = K \Rightarrow K = 43$

Cevap: B

3.

6	8	11	13	21	18	41	23	81
	+5	+10	+20	+40				
		+5	+5	+5				

Cevap: C

4. $a - 3b = -3 \Rightarrow a = 3b - 3$

$a + b = 7 \Rightarrow a = 7 - b = 3b - 3 \Rightarrow 4b = 10 \Rightarrow b = \frac{5}{2}$

$\Rightarrow a + \frac{5}{2} = 7 \Rightarrow a = 7 - \frac{5}{2} = \frac{9}{2}$

$\Rightarrow (-3) \triangle (7) = \left(\frac{9}{2}\right)^2 - \left(\frac{5}{2}\right)^2 = \frac{81}{4} - \frac{25}{4} = \frac{56}{4} = 14$

Cevap: A

5. $\left(\frac{1}{a+b}\right) \odot (a - b)$

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

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

$\Rightarrow 2a = \frac{8}{2} \Rightarrow a = 2$

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

$\Rightarrow \frac{2}{3} \odot \frac{5}{2} = 2.2 + 3.\left(-\frac{1}{2}\right) = 4 - \frac{3}{2} = \frac{5}{2}$

Cevap: D

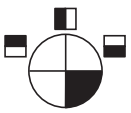
6. $3 \square k = 3.3 + k = 9 + k$

$(k + 1) \square 1 = 3(k + 1) + 1 = 3k + 4$

$\Rightarrow 9 + k = 3k + 4 \Rightarrow 5 = 2k \Rightarrow k = \frac{5}{2}$

Cevap: D

7.



Ok yönünde dönerlerse cevap E olur.

Cevap: E

8. $\dfrac{\cancel{5}.\frac{3}{\cancel{5}}.\cancel{4}.\cancel{3}.\cancel{3}.1.\overset{3}{\cancel{6}}.\frac{1}{\cancel{2}}.\frac{1}{\cancel{9}}}{\cancel{4}} = 3.3 = 9$

Cevap: B

9. $\triangle = 1 \quad \bullet = 2 \quad \bigcirc = 3 \quad \blacksquare = 4 \quad \square = 5 \quad \blacktriangle = 6$

$\Rightarrow \blacktriangle\bullet\blacksquare = 624$

Cevap: A

10.

I

⊕	○	□
△	⟁	⊞
⊞	○	⊕
□	△	○
⟁	△	□

$\Rightarrow$

II

534 427 652

356 726

$\bigcirc = 2 \quad \text{⟁} = 3 \quad \boxplus = 4 \quad \triangle = 5 \quad \square = 6 \quad \oplus = 7$

$\Rightarrow \oplus\triangle\boxplus = 754$

Cevap: C

Diğer Sayfaya Geçiniz.

11.

9	5	6	7	8
6	9	8	5	7
8	7	5	6	9
7	6	9	8	5
5	8	7	9	6

Cevap: B

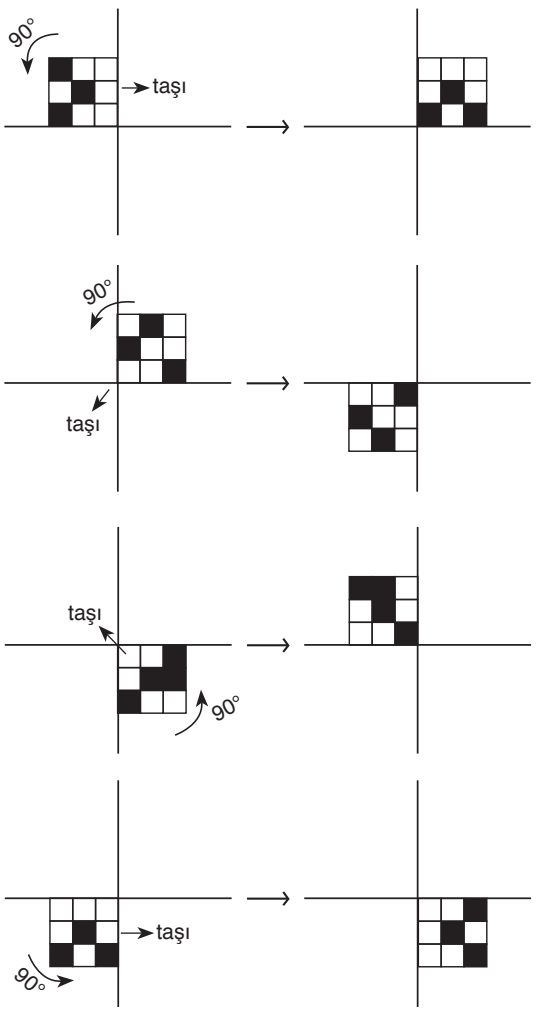
12. $a + b = 2a - b \Rightarrow a = 2b$

$a + b = 2b + b = 5b - 12 \Rightarrow 2b = 12 \quad b = 6$

$c + c = b + 4 \Rightarrow 2c = 10 \Rightarrow c = 5$

Cevap: C

13.



Cevap: E

14. $2a = n + 5 \Rightarrow a = \frac{n+5}{2}$, $2b = 2n + 2 \Rightarrow b = n + 1$

$\Rightarrow a.b = \frac{n+5}{2}(n + 1) = 6n + 16$

$\Rightarrow n^2 + 6n + 5 = 12n + 32$

$\Rightarrow n^2 - 6n - 27 = 0 \Rightarrow (n - 9)(n + 3) = 0 \Rightarrow n = 9$

Cevap: A

15. A = 8 C = 3

$$\begin{array}{r} 88 \\ +\ 33 \\ \hline 121 \end{array} \Rightarrow M = 2 , K = 1$$

$\Rightarrow M + K = 6$

Cevap: E

16. Açık ve koyu alt alta gelecek şekilde olmalı.

Açığın altına koyu.

Cevap: D

17. $\frac{x}{y} = \frac{1}{2} \Rightarrow y = 2x$

$\frac{x+y}{2} = 15 \Rightarrow x + y = 30$

$\Rightarrow 3x = 30$

$\Rightarrow x = 10 , y = 20$

$A = x.y = 200$

Cevap: D

18. $x.y = x^3 \Rightarrow y = x^2$

$z - y = x \Rightarrow z = x^2 + x$

$\frac{x}{y} = \frac{1}{3} \Rightarrow x = 3 , y = 9 , z = 12$

$\frac{z}{t} = \frac{1}{3} \Rightarrow t = 36$

$A = x - t = -33$

$B = \frac{x+y}{2} = 6$

$$\begin{array}{r} + \\ \hline -27 \end{array}$$

Cevap: A

19.

1	3	5	40
2	4	6	61
1	2	3	**x**

$1^2 + 3^2 + 5^2 + 5 = 40$

$2^2 + 4^2 + 6^2 + 5 = 61$

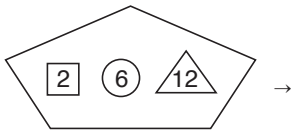
$1^2 + 2^2 + 3^2 + 5 = 19$

Cevap: B

20. $\frac{x-7}{6} + 1 = 50 \Rightarrow x = 301$

Cevap: A

21.

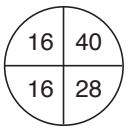


$\left(4.2 + 6 + \frac{12}{3}\right)^2 = 182$

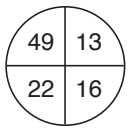
$= 324$

Cevap: E

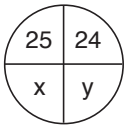
22.



16 + 16 + 40 + 28 = 100



49 + 22 + 13 + 16 = 100



25 + x + 24 + y = 100

$\Rightarrow$ x + y = 51

Cevap: B

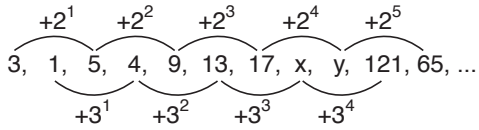
23.

1	**5**	3	4	**2**
2	1	**5**	**3**	4
4	**2**	1	**5**	3
3	**4**	2	**1**	**x = 5**
5	**3**	**y = 4**	2	**1**

x + y = 9

Cevap: E

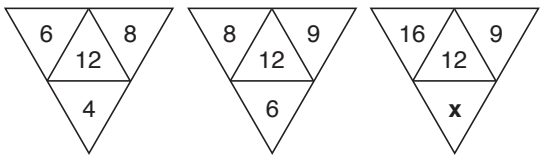
24.



x = 40 , y = 33 $\Rightarrow$ x + y = 73

Cevap: A

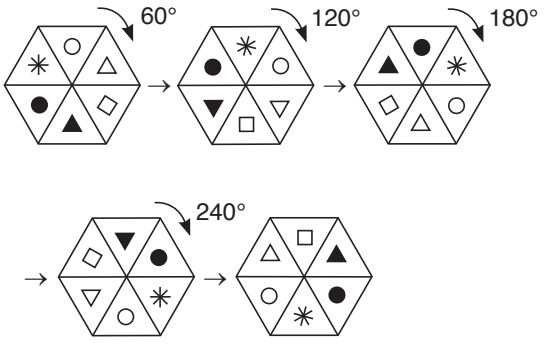
25.



6.8 = 12.4 8.9 = 12.6 16.9 = 12.12

Cevap: C

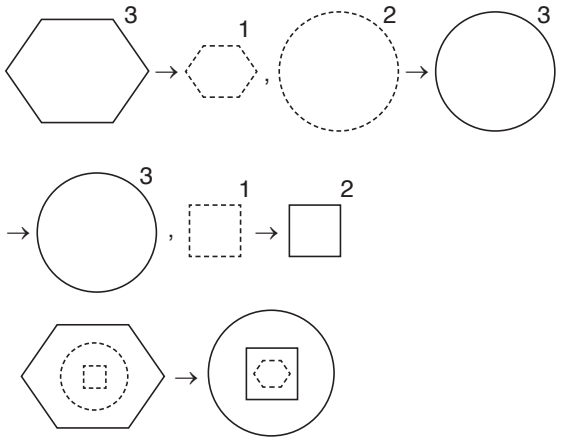
26.



Cevap: D

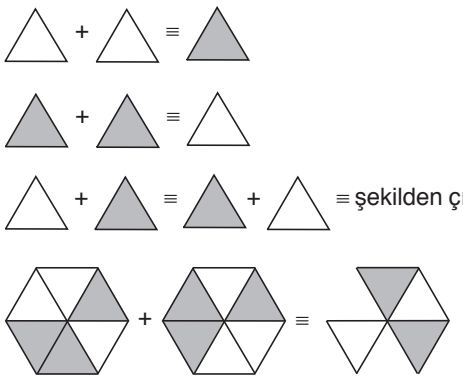
Diğer Sayfaya Geçiniz.

27.



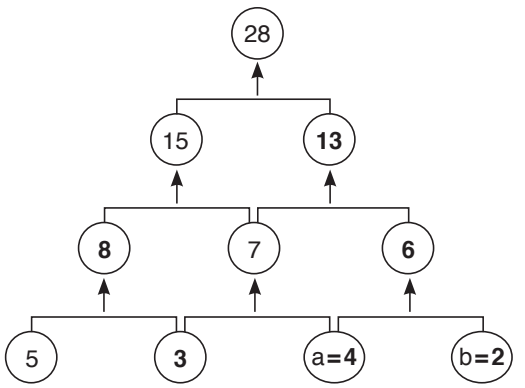
Cevap: A

28.



Cevap: D

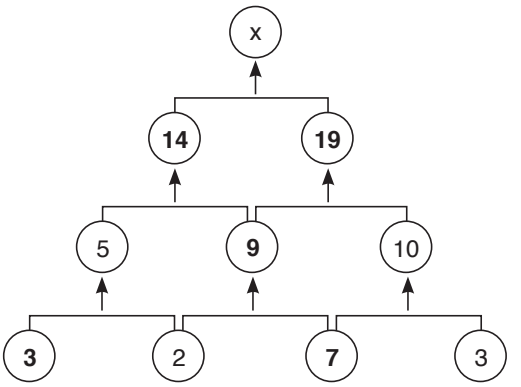
29.



4 – 2 = 2

Cevap: B

30.



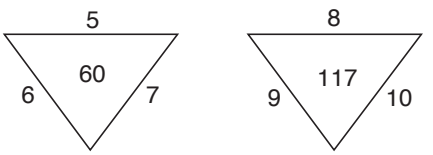
x = 14 + 19 = 33

Cevap: B

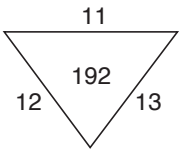
31. Şekildeki küpler sayılınca 56 tane olduğu görülür.

Cevap: B

32.



$6^2 + 7^2 - 5^2 = 60$ $9^2 + 10^2 - 8^2 = 117$

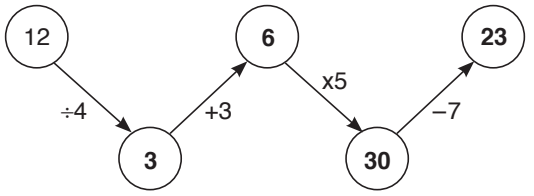


$12^2 + 13^2 - 11^2 = 192$

$\Rightarrow x = 15^2 + 16^2 - 14^2 \Rightarrow x = 285$

Cevap: A

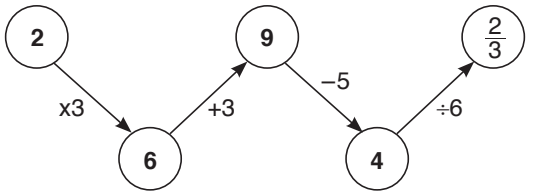
33.



a = 23

Cevap: A

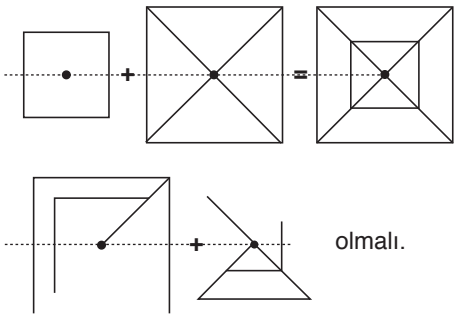
34.



a = 2

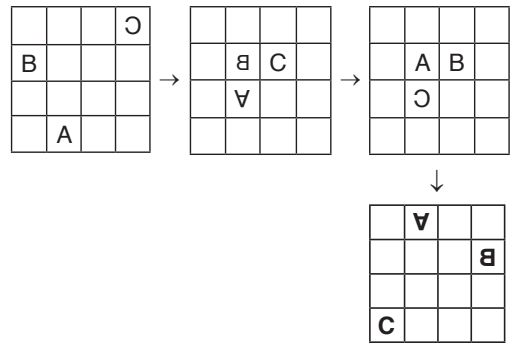
Cevap: B

35.



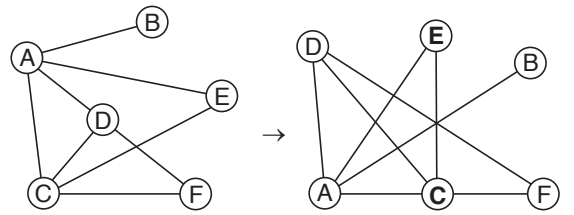
Cevap: D

36.



Cevap: D

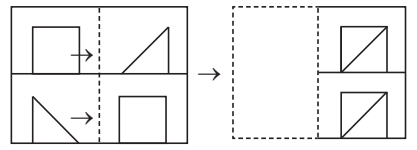
37.



X = E , Y = C

Cevap: E

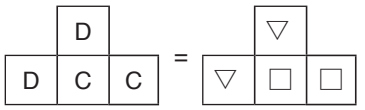
38.



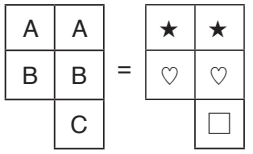
Cevap: C

Diğer Sayfaya Geçiniz.

39.



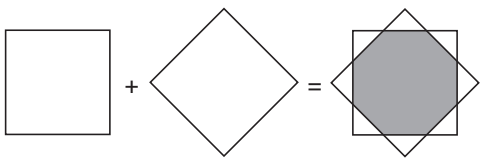
$\Rightarrow D = \triangledown \quad C = \square$



$A = \bigstar$, $B = \heartsuit$

Cevap: B

40.



Cevap: A

41. $A = \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} + \begin{bmatrix} -1 & 2 \\ 0 & -2 \end{bmatrix} = \begin{bmatrix} 1 & 5 \\ 2 & 2 \end{bmatrix}$

$\det(A+B) = \begin{vmatrix} 1 & 5 \\ 2 & 2 \end{vmatrix} = 2 - 10 = -8$

Cevap: B

42. $B^{-1} = \frac{1}{\det B}.Ek(B) = \frac{1}{1}.\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix} = \begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix}$

$= \begin{bmatrix} -2 & 0 \\ 1 & 3 \end{bmatrix}.\begin{bmatrix} 3 & -1 \\ -5 & 2 \end{bmatrix} = \begin{bmatrix} -6+0 & 2+0 \\ 3-15 & -1+6 \end{bmatrix}$

$= \begin{bmatrix} -6 & 2 \\ -12 & 5 \end{bmatrix}$

Cevap: D

43. $\frac{\sqrt{0,16}}{\sqrt{0,04}} - \frac{\sqrt{0,48}}{\sqrt{0,03}} = \sqrt{4} - \sqrt{16} = 2 - 4 = -2$

Cevap: A

44. $\sqrt{\left(\frac{4}{3}\right) + \left(\frac{1}{5}\right)^2 - 2\frac{4}{3}\cdot\frac{1}{5}} = \sqrt{\left(\frac{4}{3} - \frac{1}{5}\right)^2}$

$= \left|\frac{4}{3} - \frac{1}{5}\right| = \frac{17}{15}$

Cevap: E

45. $(5^{a-1})^b = \left(\frac{5^a}{5}\right)^b = \left(\frac{15}{5}\right)^b = 3^b = 7$

Cevap: C

46. $\frac{2^{1997}.(2^2-1)}{2^{1997}(2^1-1)} = \frac{4-1}{2-1} = 3$

Cevap: A

47. $2/2a + 3b + c = 12$

$-1/3a + 5b + c = 15$

$4a + 6b + 2c = 24$

$+ \quad -3a - 5b - c = -15$

$a + b + c = 9$

Cevap: B

48. $\sqrt{\dfrac{3+\sqrt{5}}{3-\sqrt{5}}\,(3+\sqrt{5})} - \dfrac{\sqrt{5}}{2} = \sqrt{\dfrac{(3+\sqrt{5})^2}{4}} - \dfrac{\sqrt{5}}{2}$

$= \dfrac{3+\sqrt{5}}{2} - \dfrac{\sqrt{5}}{2} = \dfrac{3}{2}$

Cevap: E

49. $\dfrac{1}{7} - \dfrac{1}{8} + \dfrac{6}{7} - \dfrac{1}{3} + \dfrac{1}{8} - 1 = 1 - \dfrac{1}{3} - 1 = -\dfrac{1}{3}$

Cevap: C

50. $\left(\dfrac{a+2b}{b}\right).\left(\dfrac{c-d}{d}\right) = \left(\dfrac{a}{b}+2\right).\left(\dfrac{c}{d}-1\right)$

$= \left(\dfrac{4}{3}+2\right).\left(\dfrac{4}{3}-1\right)$

$= \dfrac{10}{3}\cdot\dfrac{1}{3} = \dfrac{10}{9}$

Cevap: C

51. $xz - xy + x^2 - yz = x.(z+x) - y(z+x)$

$= \underbrace{(x-y)}_{3}.\underbrace{(z+x)}_{8} = 24$

$x - y = 3$

$+\ y + z = 5$

$x + z = 8$

Cevap: A

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

Cevap: D

53. $2x + \dfrac{1}{y} = 2y + \dfrac{1}{x}$ $\qquad 2x - 2y = \dfrac{1}{x} - \dfrac{1}{y}$

$2.(x-y) = \dfrac{(y-x)}{xy}$

$x.y = -\dfrac{1}{2}$

Cevap: B

54. $f\left(\dfrac{x+2}{x-4}\right) = \dfrac{x-4}{x+2} + 3$

$f\left(\dfrac{1}{41}\right) = 41 + 3 = 44$

Cevap: E

55. $\dfrac{(2006+1).(2006^2 - 2006 + 1)}{(2006^2 - 2005)} \cdot \dfrac{3}{2007}$

$= \dfrac{2007.(2006^2 - 2005)}{(2006^2 - 2005)} \cdot \dfrac{3}{2007} = 3$

Cevap: B

56. $2x^3 + ax^2 + 6x - 3 = (x^2 + 3).B(x)$

$x^2 = -3$

$2x^2.x + ax^2 + 6x - 3 = 0$

$-6x - 3a + 6x - 3 = 0$

$3a = -3 \quad a = -1$

Cevap: A

57. $\log_{\sqrt{3}} 3 = 2$

$\log_8 4 = \log_{2^3} 2^2 = \dfrac{2}{3}$

$\log_3 \sqrt[3]{3} = \log_3 3^{\frac{1}{3}} = \dfrac{1}{3}$

$2 + \dfrac{2}{3} - \dfrac{1}{3} = 2 + \dfrac{1}{3} = \dfrac{7}{3}$

Cevap: D

Diğer Sayfaya Geçiniz.

58. $x^3 + 4 = 68$

$x^3 = 64$

$x = 4$

Cevap: E

59. $\lim_{x \to 2} \frac{x^2 + ax + b}{x^2 - 4} = \frac{0}{0}$

$4 + 2a + b = 0 \qquad 2a + b = -4$

$\lim_{x \to 2} \frac{2x + a}{2x} = \frac{4 + a}{4} = 3 \qquad 4 + a = 12$

$\boxed{a = 8}$

$\boxed{b = -20}$

$a + b = -12$

Cevap: C

60. $\lim_{x \to -3} \frac{f(-3)}{-27} = \frac{1}{3}$

$f(-3) = -9$

$\lim_{x \to -3} \frac{f(x)}{x^2} = \frac{f(-3)}{9} = \frac{-9}{9} = -1$

Cevap: B

61. $\lim_{x \to 0} \frac{6x - 2.\sin 4x}{2x + 2.\sin 2x} = \frac{0}{0}$ L Hopital

$\lim_{x \to 0} \frac{6 - 2.4.\cos 4x}{2 + 2.2.\cos 4x} = \frac{6 - 8}{2 + 4} = \frac{-2}{6} = -\frac{1}{3}$

Cevap: D

62. $f(x) = \frac{3}{x}$ $\qquad (fog^{-1})^{-1}(1) = (gof^{-1})(1)$

$g(x) = 2x - 1$ $\qquad = g(f^{-1}(1))$

$f^{-1}(x) = \frac{3}{x}$

$f^{-1}(1) = 3$

$g(3) = 6 - 1 = 5$

Cevap: A

63. $f(x) = \ln(x + 1) - \ln(x - 1)$

$f'(x) = \frac{1}{x + 1} - \frac{1}{x - 1}$

$f'(2) = \frac{1}{3} - 1 = -\frac{2}{3}$

Cevap: B

64. $f'(x) = e^x.\ln 2x + \frac{1}{x}.e^x = e^x.\left(\ln 2x + \frac{1}{x}\right)$

$f''(x) = e^x\left(\ln 2x + \frac{1}{x}\right) + \left(\frac{1}{x} - \frac{1}{x^2}\right).e^x$

$= e^x\left(\ln 2x + \frac{2}{x} - \frac{1}{x^2}\right)$

$f''\left(\frac{1}{2}\right) = e^{\frac{1}{2}}.(\underbrace{\ln 1}_{0} + \not{4} - \not{4}) = 0$

Cevap: A

65. $f(x) = \cos^2 2x + \sin^2 3x$

$f'(x) = -2.\cos 2x.\sin 2x.2 + 2\sin 3x.\cos 3x.3$

$f'(x) = -4.\cos 2x.\sin 2x + 6\sin 3x.\cos 3x$

$f'\left(\frac{\pi}{6}\right) = -4.\cos\frac{\pi}{3}\sin\frac{\pi}{3} + 6.\sin\frac{\pi}{2}.\cos\frac{\pi}{2}$

$= -\not{4}.\frac{1}{\not{2}}.\frac{\sqrt{3}}{\not{2}} + 6.1.0 = -\sqrt{3} + 0 = -\sqrt{3}$

Cevap: B

66. $x = 2 \Rightarrow f(3) = 8 - 2 + 3 = 9$

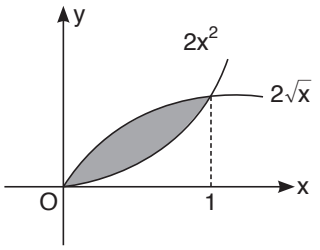
$2.f'(2x - 1) = 4x - 1$

$x = 2 \qquad 2.f'(3) = 7 \qquad f'(3) = \frac{7}{2}$

$9 + \frac{7}{2} = \frac{25}{2}$

Cevap: E

67.



$2x^2 = 2\sqrt{x}$

$x^2 = \sqrt{x}$

$x^4 - x = 0$

$x(x^3 - 1) = 0$

$x = 0 \ , \ x = 1$

$$\int_0^1 (2\sqrt{x} - 2x^2)\,dx$$

$$\left(2.\frac{2}{3}.x^{\frac{3}{2}} - 2.\frac{x^3}{3}\right)\Big|_0^1 = \left(\frac{4}{3} - \frac{2}{3}\right) = \frac{2}{3}$$

Cevap: D

68. $\ln x = t$

$\frac{1}{x}dx = dt$

$\int 3.t^2.dt = \cancel{3}.\frac{t^3}{\cancel{3}} + c$

$= \ln^3 x + c$

Cevap: C

69.

$$\int_{-1}^{3} f(x)\,dx + \int_{-1}^{3} 4dx = 20$$

$$\int_{-1}^{3} f(x)\,dx + (4x)\Big|_{-1}^{3} = 20$$

$$\int_{-1}^{3} f(x)\,dx + 16 = 20 \qquad \int_{-1}^{3} f(x)\,dx = 4$$

$$\int_{-1}^{5} f(x)\,dx = \underbrace{\int_{-1}^{3} f(x)\,dx}_{4} + \int_{3}^{5} f(x)\,dx = 32$$

$$\int_{3}^{5} f(x)\,dx = 28$$

Cevap: D

70. Sayımız x olsun.

$x.\frac{4}{5} + 3 = x$

$3 = x - \frac{4x}{5}$

$3 = \frac{5x - 4x}{5}$

$15 = x$

Cevap: A

71. 1 dakika = 60 saniye

$60.\frac{1}{4} = 15$ saniyede 250 metre yol

O halde

15 sn	250 m
75 sn	x

$\cancel{15}.x = \overset{5}{\cancel{75}}.250$

x = 1250 metre yol alır.

Cevap: E

72. $i^2 = -1$

$$\frac{6}{\sqrt{5} - i} - \frac{3}{i} = \frac{\cancel{6}(\sqrt{5} + i)}{\cancel{6}} - \frac{3i}{1} = \sqrt{5} + 4i$$

$(\sqrt{5} + i) \qquad (-i)$

Cevap: E

73. $i^2 = -1$

$i^3 + i^5 + i^7 + i^9 + ... + i^{53} = (\cancel{-i}) + \cancel{i} - \cancel{i} + \cancel{i} + ... \cancel{-i} + \cancel{i} = 0$

Cevap: A

Diğer Sayfaya Geçiniz.

74. $\frac{\cos(17+43)}{\sin(12+18} = \frac{\cos 60}{\sin 30} = 1$

Cevap: B

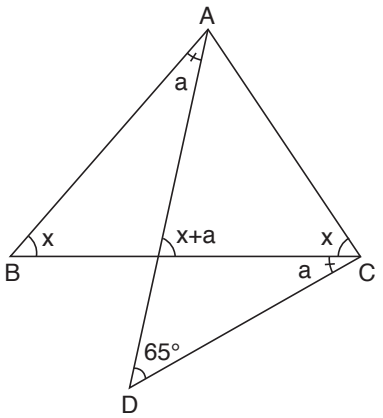
75. $\tan 1 . \tan 2 . \tan 3 ..... \tan 89$

$= \cancel{\tan 1} . \cancel{\tan 2} ... \tan 45 . \cancel{\cot 46} ... \cancel{\cot 2} . \cancel{\cot 1}$

$= 1.1. ... .1 = 1$

Cevap: D

76.



$x + a = 65 + a$

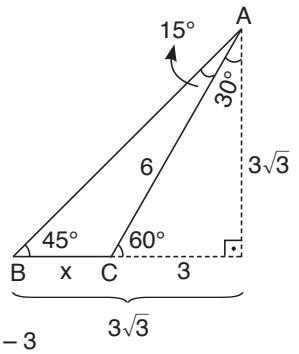
$x = 65$

$65 + 65 = 130$

$180 - 130 = 50$

Cevap: A

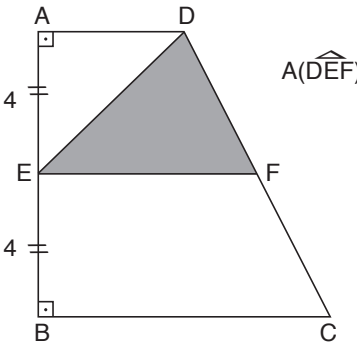
77.



$x = 3\sqrt{3} - 3$

Cevap: B

78.



$A(\widehat{DEF}) = \frac{|EF|.4}{2} = 10$

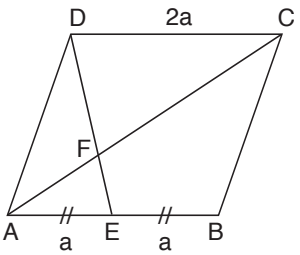
$|EF| = 5$

$|EF| = \frac{|AD| + |BC|}{2}$

$|BC| + |AD| = 10$

Cevap: C

79.

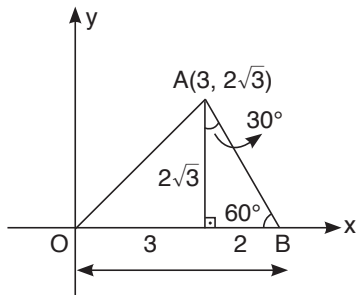


$\widehat{AEF} \sim \widehat{CDF}$

$\frac{|AE|}{|DC|} = \frac{a}{2a} = \frac{1}{2} = \frac{|AF|}{|FC|}$

Cevap: C

80.



$A(\widehat{AOB}) = \frac{5.2\sqrt{3}}{2} = 5\sqrt{3}$

Cevap: E