Deneme Sınavı
Trial Exam

4

ÇÖZÜMLER

TAMAMI VİDEO ÇÖZÜMLÜ

VİDEO ÇÖZÜM UYGULAMASI İÇİN

1.

AB(İ)YE
YBORI
OBLKI
KB(İ)EY
LBYI(İ)

$\Rightarrow$

51897
01(2)34
8137(2)
31567
91(2)43 $\Rightarrow$ İ = 2

İ = 2 I = 7 B = 1 Y = 3 L = 8
O = 5 R = 6 K = 9 E = 4 A = 0

ABİYE $\rightarrow$ 01234
YBORI $\rightarrow$ 31567
OBLKI $\rightarrow$ 51897
KBİEY $\rightarrow$ 91243
LBYİ $\rightarrow$ 81372

O halde YEBOR 34156

Cevap: C

2. 5, 6, 10, 19, (35), 60, 96

$+1^2$ $+2^2$ $+3^2$ $+4^2$ $+5^2$ $+6^2$

? = 35

Cevap: C

3. $\triangle = x$ $\bigcirc = y$ $\square = z$

$\Rightarrow x + 2y = z$ (I.) , $x + z = 3y$ (II.)

$\Rightarrow x + (x + 2y) = 3y \;\; 2x = y$

$\Rightarrow \triangle\triangle = \bigcirc$

Cevap: A

4. $\diamond = 7$, $\maltese = 9$, $\triangle = 5$, $\square = 1$, $\bigcirc = 2$

$\Rightarrow \diamond\square\bigcirc = 712$

Cevap: D

5. $\bullet = 9$, $\bigcirc = 1$, $\triangle = 2$, $\maltese = 3$, $\square = 4$, $\blacktriangle = 7$

$\Rightarrow \blacktriangle\maltese\triangle = 732$

Cevap: A

6. $\square = 3$, $\blacktriangle = 7$, $\bigcirc = 6$, $\triangle = 4$, $\bullet = 8$, $\blacksquare = 5$

$\Rightarrow \bullet\blacktriangle\bigcirc = 876$

Cevap: C

7. $\triangle = 5$, $\bigcirc = 3$, $\square = 2$, $\boxplus = 9$, $\oplus = 1$, $\boxdot = 7$

$\Rightarrow \boxplus\,\triangle\square = 952$

Cevap: E

8. $\frac{1}{2} + \frac{1}{3}.\frac{1}{1\oplus 2} = 1 + 2 - 1$

$\Rightarrow \frac{1}{3.(1\oplus 2)} = 2 - \frac{1}{2} \Rightarrow \frac{1}{3.(1\oplus 2)} = \frac{3}{2}$

$\Rightarrow 9.(1\oplus 2) = 2 \Rightarrow 1\oplus 2 = \frac{2}{9}$

Cevap: E

9. $\frac{1}{a} = \frac{1}{2} \Rightarrow a = 2$

$\sqrt[3]{b} = \frac{1}{3} \Rightarrow b = \frac{1}{27}$

$\frac{1}{a} \otimes \sqrt[3]{b} = a - 3b$

$\Rightarrow \frac{1}{2} \otimes \frac{1}{3} = 2 - 3.\frac{1}{27} = 2 - \frac{1}{9} = \frac{17}{9}$

Cevap: A

10. $(a + 2) \triangle (b - 1) = 2a - b$

$(3 \triangle (-3)) \rightarrow a + 2 = 3 \Rightarrow a = 1$

$b - 1 = -3 \Rightarrow b = -2$

$\Rightarrow (1 + 2) \triangle (-2 - 1) = 2.1 - (-2) \Rightarrow 3 \triangle (-3) = 4$

$(a - 1) \square (b + 1) = a + 2b$

$\downarrow \qquad \downarrow$

$\Rightarrow (3 - 1) \square (3 + 1) = 3 + 2.3 = 9 \Rightarrow 2 \square 4 = 9$

$\Rightarrow 2 \square (3 \triangle (-3)) = 9$

Cevap: B

TASARI EĞİTİM YAYINLARI

Diğer Sayfaya Geçiniz.

11. **I.** $(a+b) \odot (a-b) = \frac{a}{b}$

$9 \odot 3 \rightarrow \left.\begin{matrix} a+b=9 \\ a-b=3 \end{matrix}\right\} \rightarrow 2a = 12 \rightarrow a = 6 \rightarrow b = 3$

$\rightarrow (6+3) \odot (6-3) = \frac{6}{3} \rightarrow 9 \odot 3 = 2$

$\rightarrow 1 \diamondsuit (9 \odot 3) = 1 \diamondsuit 2$

$\rightarrow (a-3) \diamondsuit (b-2) = a.b$

$\rightarrow (4-3) \diamondsuit (4-2) = 4.4$

$\rightarrow 1 \diamondsuit 2 = 16$

Cevap: D

12. $a + b = 4a \Rightarrow b = 3a$

$b + b = 12 \Rightarrow b = 6 \;\; a = 2$

$c + a = b \Rightarrow c + 2 = 6 \Rightarrow c = 4$

Cevap: E

13. $b^2 = 4a^2 \Rightarrow b = 2a$

$c.c = b \Rightarrow b = c^2 \Rightarrow c^2 = 2a \Rightarrow a = \frac{c^2}{2}$

$c.a = 32 \Rightarrow c \cdot \frac{c^2}{2} = 32 \Rightarrow c^3 = 64 \Rightarrow c = 4 \Rightarrow b = 16$

Cevap: C

14. $a^2 = 21 - c$, $a.b = 23 + c$ $\;\; a^2 + ab = 21 - c + 23 + c$

$\Rightarrow a(a+b) = 44$

$a + b = 11 \Rightarrow a.11 = 44 \Rightarrow a = 4 \Rightarrow b = 7 \Rightarrow c = 5$

$\Rightarrow b + c = 12$

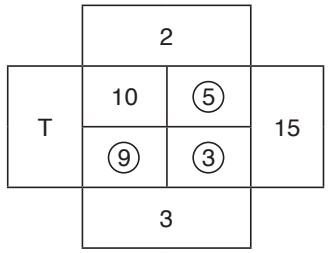
Cevap: C

15. $12 = 2(a+1) \Rightarrow a = 5$

$T = 3.(a+2) \Rightarrow T = 21$

Cevap: B

16.



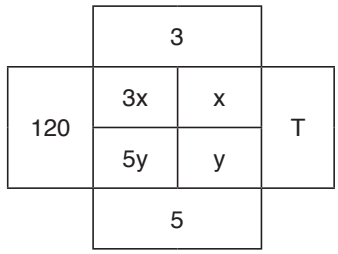
$10:5 = 2$

$5.3 = 15$

$9:3 = 3 \Rightarrow T = 10.9 = 90$

Cevap: E

17.



$3x:x = 3$

$5y:y = 5$

$120 = 3x.5y \Rightarrow xy = 8$

$\Rightarrow T = 8$

Cevap: A

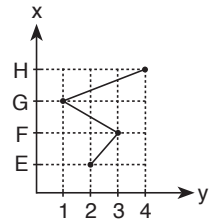
18. $K = 6 + 4 = 10$, $L = 5 + 3 = 8$

Cevap: A

19. $K = 3.1 = 3$, $L = 14.6 = 84$

Cevap: C

20. $E \rightarrow 2$, $F \rightarrow 3$, $G \rightarrow 1$, $H \rightarrow 4$ $\rightarrow$



Cevap: B

TASARI EĞİTİM YAYINLARI

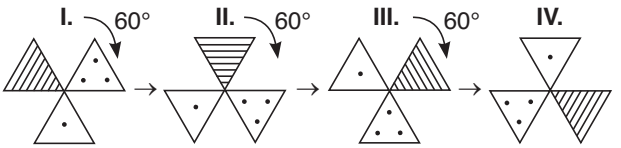
21. A: △ = 3, ○ = 2, ⊓ = 2, ▽ = 0, ⊔ = 0, □ = 0
B: △ = 0, ○ = 3, ⊓ = 0, ▽ = 3, ⊔ = 0, □ = 1
⇒ ? = ⊓

Cevap: B

22. K = 2x , L = x , M = 5x , N = 4x
⇒ 2x + x + 5x + 4x = 360°
⇒ 12x = 360° ⇒ x = 30°
⇒ K = 60° , L = 30° , M = 150° , N = 120°

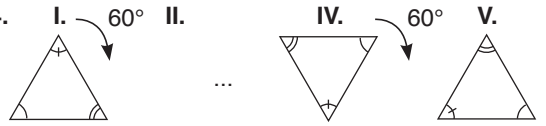
Cevap: E

23.



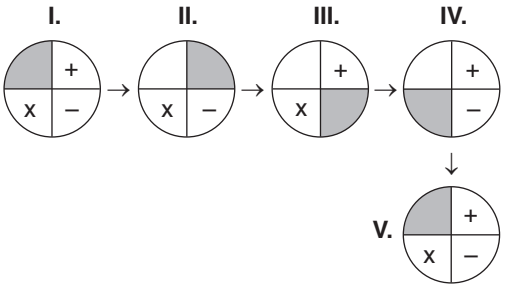
Cevap: D

24.



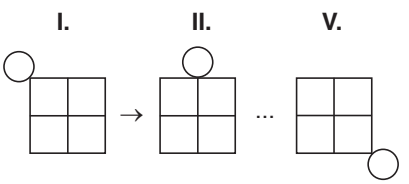
Cevap: C

25.



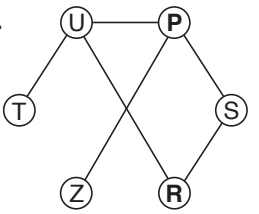
Cevap: D

26.



Cevap: A

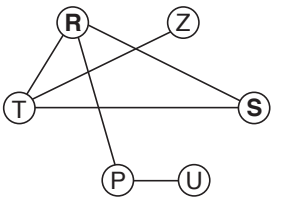
27.



⇒ y = P , x = R

Cevap: C

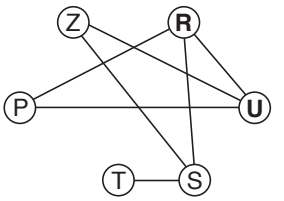
28.



⇒ x = S , y = R

Cevap: B

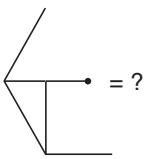
29.



⇒ x = R , y = U

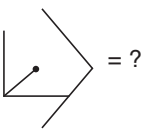
Cevap: E

30.



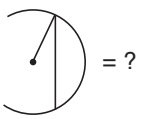
Cevap: D

31.



Cevap: A

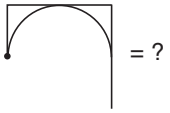
32.



Cevap: D

TASARI EĞİTİM YAYINLARI

Diğer Sayfaya Geçiniz.

33.  = ?

Cevap: B

34. x 10

Cevap: E

35. x 13

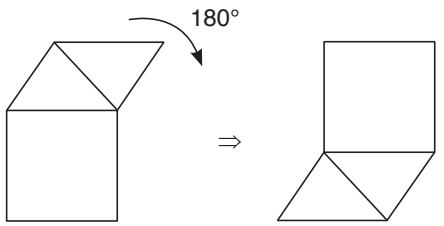
Cevap: C

36. x 12

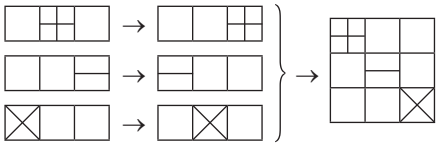
Cevap: B

37. x 16

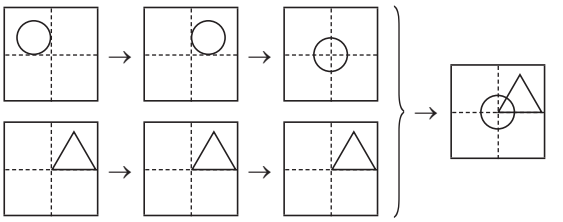
Cevap: A

38. 

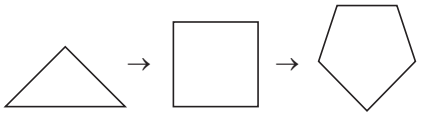
Cevap: E

39. 

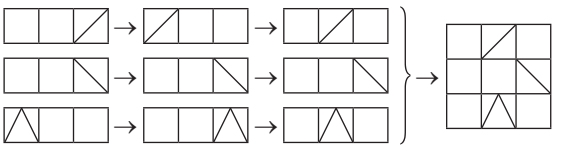
Cevap: C

40. 

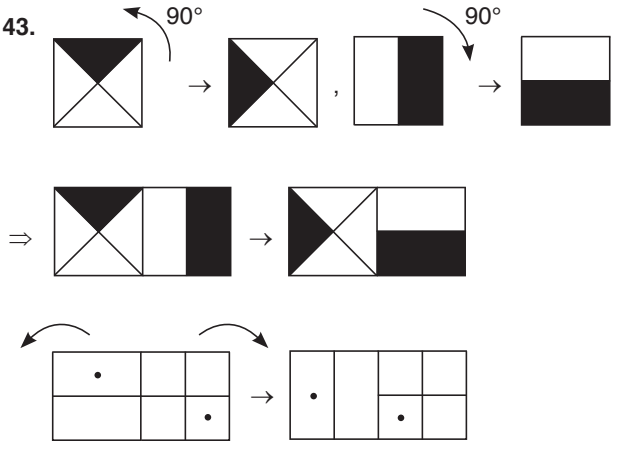
Cevap: D

41. 

Cevap: D

42. 

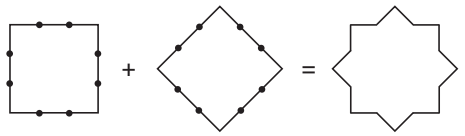
Cevap: C

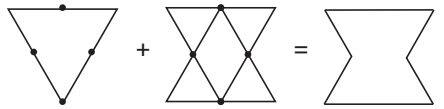
43. 

Cevap: E

TASARI EĞİTİM YAYINLARI

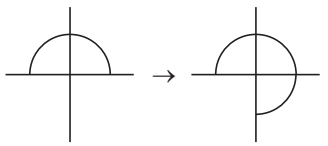
44.

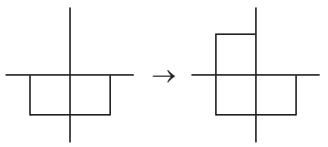
I. 

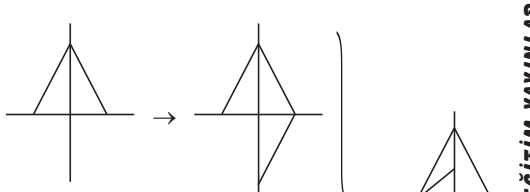
II. 

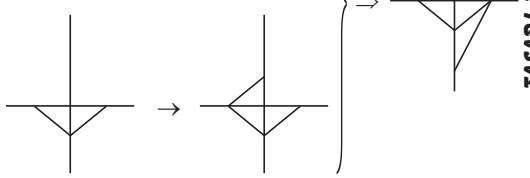
Cevap: A

45.

I. 

I. 

II. 

II. 

Cevap: B

46. $\sqrt{\frac{4}{10}} + \sqrt{\frac{9}{10}} + \sqrt{\frac{25}{10}} = \frac{2}{\sqrt{10}} + \frac{3}{\sqrt{10}} + \frac{5}{\sqrt{10}}$

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

Cevap: C

47. $\sqrt{8 + 2\sqrt{15}} = \sqrt{5} + \sqrt{3}$ $\quad \sqrt{8 - 2\sqrt{15}} = \sqrt{5} - \sqrt{3}$

$3 + 5 \quad 3.5 \qquad 3 + 5 \quad 3.5$

$\sqrt{5} + \sqrt{3} - (\sqrt{5} - \sqrt{3}) = \sqrt{5} + \sqrt{3} - \sqrt{5} + \sqrt{3} = 2\sqrt{3}$

Cevap: C

48. $\left.\begin{matrix} 2^{2x} = 3^3 \\ 2^1 = 3^y \end{matrix}\right\} \rightarrow \frac{2x}{1} = \frac{3}{y} \rightarrow 2xy = 3 \rightarrow xy = \frac{3}{2}$

$25^{xy} = 5^{2xy} = 5^{2.\frac{3}{2}} = 5^3 = 125$

Cevap: D

49. $\frac{9}{\sqrt{5} - \sqrt{2}} + \frac{12}{\sqrt{5} + \sqrt{2}} - (7\sqrt{5} - \sqrt{4.2})$

$(\sqrt{5} + \sqrt{2}) \quad (\sqrt{5} - \sqrt{2})$

$= \frac{9(\sqrt{5} + \sqrt{2})}{5 - 2} + \frac{12(\sqrt{5} - \sqrt{2})}{5 - 2} - 7\sqrt{5} + 2\sqrt{2}$

$= \frac{\overset{3}{\cancel{9}}.(\sqrt{5} + \sqrt{2})}{\cancel{3}} + \frac{\overset{4}{\cancel{12}}(\sqrt{5} - \sqrt{2})}{\cancel{3}} - 7\sqrt{5} + 2\sqrt{2}$

$= 3\sqrt{5} + 3\sqrt{2} + 4\sqrt{5} - 4\sqrt{2} - 7\sqrt{5} + 2\sqrt{2}$

$= \sqrt{2}$

Cevap: A

50. $\frac{10.9! + 9!}{10.9! - 9!} = \frac{9!(10 + 1)}{9!(10 - 1)} = \frac{11}{9}$

Cevap: B

51. $3^{x+2} + 3^{x+1} = 3^1.3^{x+1} + 3^{x+1} = 3^{x+1}(3 + 1)$

$= 4.3^{x+1} = \frac{4}{3^5} \Rightarrow 4.3^{x+1} = 4.3^{-5}$

$\Rightarrow x + 1 = -5 \quad x = -6$

Cevap: D

52. $5^{x+1}.5^{2y} = 5^3 \Rightarrow x + 1 + 2y = 3 \Rightarrow x + 2y = 2$ ... I.

$2^{2x}.2^y = 2^2 \Rightarrow 2x + y = 2$ ... II.

I. $\quad x + 2y = 2$

III. $+ \quad 2x + y = 2$

$3x + 3y = 4 \Rightarrow x + y = \frac{4}{3}$

Cevap: A

TASARI EĞİTİM YAYINLARI

Diğer Sayfaya Geçiniz.

53. $\left.\begin{matrix}3,43 = a\\ 1,57 = b\end{matrix}\right\} \Rightarrow (3,43 - 1,57)^2 + 4.3,43.1,57$

$= (a - b)^2 + 4ab$

$= a^2 - 2ab + b^2 + 4ab$

$= a^2 + 2ab + b^2 = (a + b)^2 = 5^2 = 25$

Cevap: B

54. $\dfrac{x^2 - (y^2 + 4y + 4)}{x + y + 2} + x + 2 = \dfrac{x^2 - (y + 2)^2}{x + y + 2} + x + 2$

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

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

$= 2x - y$

Cevap: E

55. $(fog)(6) = f(g(6)) = ?$

$x - 1 = 6$, $x = 7 \Rightarrow g(7 - 1) = 2.7 + 1 \Rightarrow g(6) = 15$

$\Rightarrow f(15) = ?$

$x + 1 = 15 \Rightarrow x = 14 \Rightarrow f(14 + 1) = 3.14 - 1$

$\Rightarrow f(15) = 42 - 1 = 41$

$f(15) = f(g(6)) = (fog)(6) = 41$

Cevap: E

56. $f(x + 2) = f(x) + 7$, $f(7) = 11$

$x = 7$, $f(9) = f(7) + 7 = 11 + 7 = 18$

$x = 9$, $f(11) = f(9) + 7 = 18 + 7 = 25$

Cevap: B

57. $z = \dfrac{4 + 7i}{2 + i} = \dfrac{8 + 14i - 4i + 7}{5} = \dfrac{15 + 10i}{5} = 3 + 2i$

$(2 - i)$

$z.(1 + i) = (3 + 2i)(1 + i) = 3 + 3i + 2i + 2i^2$

$= 3 + 5i - 2 = 1 + 5i$

Cevap: B

58. $x_1 + x_2 = -3$, $x_1.x_2 = -2$

$x_1^2 + x_2^2 = (x_1 + x_2)^2 - 2x_1x_2 = (-3)^2 - 2.(-2) = 9 + 4 = 13$

Cevap: C

59. $x^3 + \dfrac{1}{x^3} = \left(x + \dfrac{1}{x}\right)^3 - 3\cancel{x}.\dfrac{1}{\cancel{x}}.\left(x + \dfrac{1}{x}\right)$

$= 4^3 - 3.4 = 64 - 12 = 52$

Cevap: A

60. $\left|\dfrac{z_1.z_3}{z_2}\right| = \left|\dfrac{|z_1|.|z_3|}{|z_2|}\right| = \dfrac{\sqrt{3^2 + 1^2}.\sqrt{5^2 + 12^2}}{\sqrt{2^2 + 1^2}}$

$= \dfrac{\sqrt{10}.\sqrt{169}}{\sqrt{5}} = 13\sqrt{2}$

Cevap: A

61. $\cos 40 = 1 - \sin^2 20°$, $\sin 40 = 2\sin 20°.\cos 20°$

$\Rightarrow \dfrac{1 - \cos 40}{\sin 40} = \dfrac{1 - (1 - 2\sin^2 20)}{2\sin 20.\cos 20}$

$= \dfrac{2\sin^2 20}{2\sin 20.\cos 20} = \dfrac{\sin 20}{\cos 20} = \tan 20$

$= \cot = 70$

Cevap: C

62. $|AC|^2 = |AB|^2 + |BC|^2 \Rightarrow |AC|^2 = 4^2 + 3^2 \Rightarrow |AC|^2 = 25$

$|AC| = 5$

$\sin(D\hat{C}E) = \sin(A\hat{C}B) = \dfrac{4}{5}$

$A(\overset{\Delta}{CED}) = \dfrac{1}{2} \cdot |CD| \cdot |CE| \cdot \sin(D\overset{\Delta}{CE})$

$= \dfrac{1}{\cancel{2}} \cdot \dfrac{\cancel{5}}{\cancel{2}} \cdot 3 \cdot \dfrac{\cancel{4}}{\cancel{5}} = 3\ cm^2$

Cevap: D

63. $\cos 50 + \cos 40 = 2.\cos\left(\dfrac{50 + 40}{2}\right).\cos\left(\dfrac{50 - 40}{2}\right)$

$= 2.\cos 45.\cos 5$

$\sin 50 + \sin 40 = 2.\sin\left(\dfrac{50 + 40}{2}\right).\cos\left(\dfrac{50 - 40}{2}\right)$

$= 2.\sin 45.\cos 5$

$\Rightarrow \dfrac{\cos 50° + \cos 40°}{\sin 50° + \sin 40°} = \dfrac{\cancel{2}.\cos 45.\cancel{\cos 5}}{\cancel{2}.\sin 45.\cancel{\cos 5}}$

$= \dfrac{\cos 45}{\sin 45} = \cot 45 = 1$

Cevap: E

TASARI EĞİTİM YAYINLARI

64. $\lim_{x \to 1} f(x) = 9 \Rightarrow \lim_{x \to 1^-} f(x) = \lim_{x \to 1^+} f(x) = 9$

$\Rightarrow \lim_{x \to 1^-} f(x) = a + b = 9$

$\Rightarrow \lim_{x \to 1^+} f(x) = 3c + 2a + 2b = 3c + 2(a + b)$

$\Rightarrow 3c + 2.9 = 3c + 18$

$\Rightarrow 3c + 18 = 9 \Rightarrow 3c = -9 \Rightarrow c = -3$

Cevap: E

65. $\lim_{x \to 2} \frac{x^2 - x - 2}{\sqrt{x+7} - 3} = \frac{0}{0}$

(L' Hospital)

$\lim_{x \to 2} \frac{x^2 - x - 2}{\sqrt{x+7} - 3} = \lim_{x \to 2} \frac{2x - 1}{\frac{1}{2\sqrt{x+7}}} = \frac{3}{\frac{1}{6}} = 18$

Cevap: D

66. $\lim_{x \to 0} \frac{f(x) - f(0)}{x} = f'(0)$

$\Rightarrow f'(x) = -3\sin 3x$

$\Rightarrow f'(0) = \underbrace{-3\sin 0}_{0} = 0$

Cevap: C

67. $f(x) = (x^3 - 1).\left[(x^2 + x + 1) - (x^2 + 4x - 3)\right]$

$\Rightarrow f(x) = (x^3 - 1).[x^2 + x + 1 - x^2 - 4x + 3]$

$\Rightarrow f(x) = (x^3 - 1).(-3x + 4)$

$\Rightarrow f'(x) = 3x^2.(-3x + 4) + (-3).(x^3 - 1)$

$\Rightarrow f'(1) = 3.1.1 + (-3).0 = 3 + 0 = 3$

Cevap: B

68. $f(x) = \ln\left(\frac{x^3 + 1}{2x + 1}\right) - \left(\ln(x + 1) - \ln(x^2 - x + 1)\right)$

$= \ln\left(\frac{x^3 + 1}{2x + 1}\right) - \ln(x + 1)(x^2 - x + 1)$

$= \ln(x^3 + 1) - \ln(2x + 1) - \ln(x^3 + 1)$

$= -\ln(2x + 1)$

$\Rightarrow f'(x) = -\frac{2}{2x + 1} \Rightarrow f'(2) = -\frac{2}{5}$

Cevap: C

69. $f'(x) = \frac{(2x + 3)(x^2 - 3x + 4) - (2x - 3)(x^2 + 3x + 1)}{(x^2 - 3x + 4)^2}$

$\Rightarrow f'(1) = \frac{5.2 - (-1).5}{2^2} = \frac{10 + 5}{4} = \frac{15}{4}$

Cevap: B

70. $x^2 = u$

$2xdx = du \Rightarrow xdx = \frac{du}{2}$

$\Rightarrow \int_1^2 e^{x^2}.xdx = \int_1^4 e^u \frac{du}{2} = \frac{1}{2} \int_1^4 e^u du = \frac{1}{2} e^u \Big|_1^4$

$= \frac{e^4}{2} - \frac{e}{2}$

Cevap: C

71. Kız öğrenci sayısı x olsun.

Erkek öğrenci sayısı: 2x – 5 tir.

Sınıf mevcudu 22 ise

$x + 2x - 5 = 22$

$3x = 22 + 5 = 27$

$x = 9$ kız öğrenci sayısıdır.

Cevap: B

72. Gömleğin alış fiyatı 100x olsun.

%20 kârlı satışı $100x + 100x.\frac{20}{100} = 120x$

Satış fiyatı 57 + 3 = 60 TL

$120x = 60$

$x = \frac{60}{120} = \frac{1}{2}$

Alış fiyatı: $100x = 100.\frac{1}{2} = 50$ TL

Cevap: A

73. $S_1 = \int_{-1}^{0} x^4 dx = \frac{x^5}{5}\Big|_{-1}^{0} = 0 - \frac{-1}{5} = \frac{1}{5}$

$S_2 = \int_0^2 x^4 dx = \frac{x^5}{5}\Big|_0^2 = \frac{32}{5} - 0 = \frac{32}{5}$

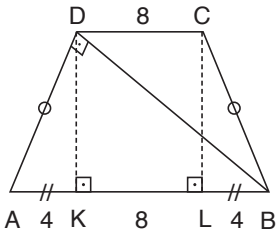
$\rightarrow S_1 + S_2 = \frac{33}{5}$

Cevap: D

TASARI EĞİTİM YAYINLARI

Diğer Sayfaya Geçiniz.

74.



$|DK| \perp |AB|$

$|CL| \perp |AB|$

$|DG| = |KL| = 8$

$|AK| = |LB| = 4$

$|DB|^2 = |BK|.|BA|$

$|DB|^2 = 12.16$

$|DB| = \sqrt{16.2} = 4\sqrt{12} = 8\sqrt{3}$

Cevap: E

75. $\frac{|BC|}{|BD|} = \frac{4}{6} = \frac{2}{3} \Rightarrow |BC| = 2k \Rightarrow |BD| = 3k$

$\Rightarrow |CD| = k$

$\Rightarrow A(\overset{\Delta}{ABC}) = 2.A(\overset{\Delta}{ACD}) = \cancel{2}.\frac{6.4}{\cancel{2}} = 24\ cm^2$

Cevap: E

76. $\vec{A} \perp \vec{B} \Rightarrow 2.4 + (-3).(t-1) = 0$

$\Rightarrow 8 - 3t + 3 = 0 \Rightarrow 11 = 3t \Rightarrow t = \frac{11}{3}$

Cevap: D

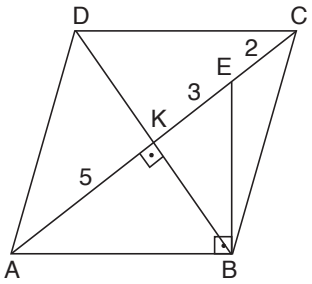
77. $A = \begin{bmatrix} k & p \\ m & n \end{bmatrix} = k.n - m.p = 5$

$\begin{vmatrix} 4p & 3k \\ 4n & 3m \end{vmatrix} = 12mp - 12kn = -12(kn - mp)$

$= -12.5 = -60$

Cevap: E

78.



$|AB| = |BC| = |CD| = |AD| \Rightarrow |AB| \perp |BE|$

$|AC| \cap |BD| = \{K\} \Rightarrow |AK| = |KC| = 5\ cm \Rightarrow |EK| = 3\ cm$

$|BE|^2 = |EK|.|AE| \Rightarrow |BE|^2 = 3.8 \Rightarrow |BE| = \sqrt{24} = 2\sqrt{6}$

Cevap: B

79. $A\overset{\Delta}{BC} \sim A\overset{\Delta}{ED} \Rightarrow \frac{|AB|}{|AE|} = \frac{|AC|}{|AD|} = \frac{|BC|}{|ED|}$

$\Rightarrow \frac{|AB|}{2} = \frac{|AC|}{4} = \frac{9}{3} = 3$

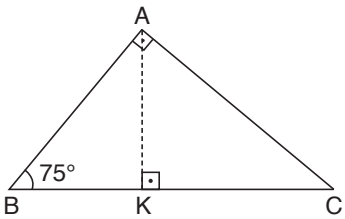
$\Rightarrow \frac{|AB|}{2} = 3 \ , \ \frac{|AC|}{4} = 3 \Rightarrow |AB| = 6 \ , \ |AC| = 12$

$\Rightarrow |BD| = 6 + 4 = 2\ cm, \ |EC| = 12 - 2 = 10\ cm$

$\Rightarrow 10 - 2 = 8\ cm$

Cevap: A

80.



$|AK| \perp |BC|$

$|AK| = h\ cm \Rightarrow |BC| = 4h\ cm$

$\Rightarrow 4h = 20\ cm \Rightarrow h = 5\ cm$

$A(\widehat{ABC}) = \frac{|BC|.|AK|}{2} = \frac{20.5}{2} = \frac{100}{2} = 50\ cm^2$

Cevap: C

TASARI EĞİTİM YAYINLARI