Deneme Sınavı
Trial Exam

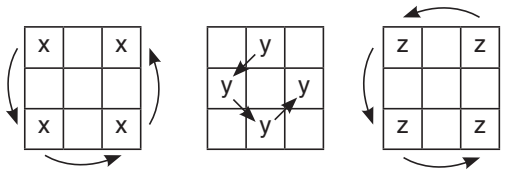
5

ÇÖZÜMLER

TAMAMI VİDEO ÇÖZÜMLÜ

VİDEO ÇÖZÜM UYGULAMASI İÇİN

1.



Cevap: B

2. $1 \triangle 2 = 1^2 = 1$

$2 \triangle 4 = 2^4 = 16$

$3 \triangle 3 = 3^3 = 27$

$5 \triangle 2 = 5^2 = 25$

Cevap: A

3.

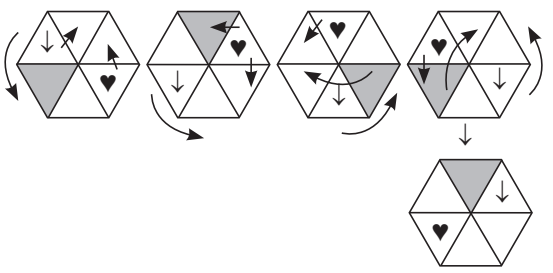
A2K	C3M	(B) 1L	→ A, B, C / 1, 2, 3 / KLM
		(C) 2M	
		A3K	

↓

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

Cevap: D

4.



Cevap: E

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

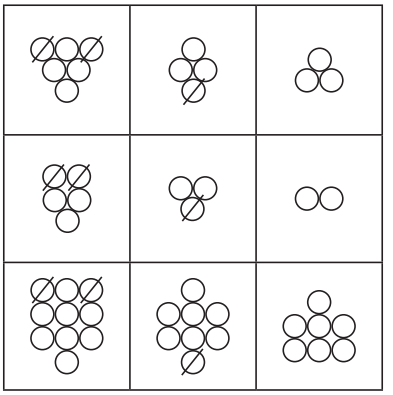
Cevap: C

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

8.

1

1 1 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 + □ + 3 + 2 + 1

↓ ↓

○ 6

Cevap: D

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

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

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

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

Cevap: E

10. f(AB) = 49

AB + A + B = 49

10A + B + A + B = 49

11A + 2B = 49

A = 3 B = 8 A.B = 24

Cevap: C

Diğer Sayfaya Geçiniz.

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

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

A + 6 – 7 = 3 $\boxed{A = 4}$

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

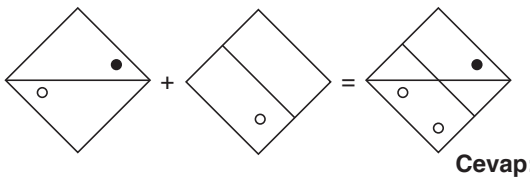
E – 7 + D = 3 9 – 7 + D = 3 $\boxed{D = 1}$

Cevap: B

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

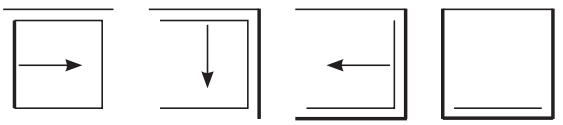
Cevap: C

13.



Cevap: B

14.



Cevap: A

15. SALI = 3265

$\boxed{AKIL = 2156}$

KALE = 1264

ASKI = 2315

ISKA = 5312

Cevap: C

16. İZBE = 1237

ZEKİ = 2781

$\boxed{ERİK = 7918}$

RİZE = 9127

BERK = 3798

Cevap: E

17. a = 8

b = 4 $\frac{a}{4} \triangle (b - 1) = 2 \triangle 3 = 8.4 - 2$

$= 32 - 2 = 30$

Cevap: B

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

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

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

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

Cevap: D

19. a b

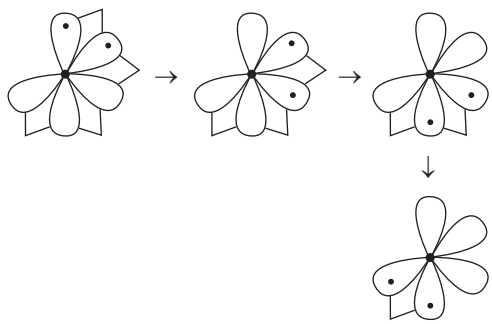
$-1 < 1$; $(-1) \star 1 = a - 3b = -1 - 3 = -4$

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

$= 40 - 1 = 39$

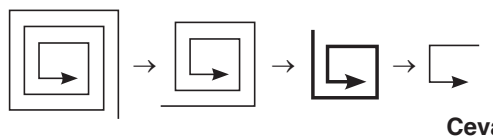
Cevap: A

20.



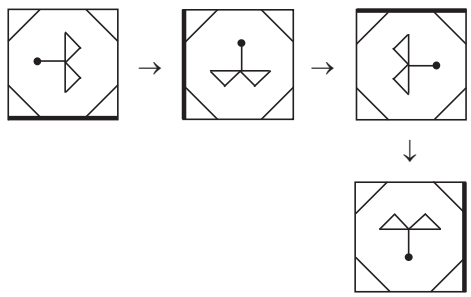
Cevap: C

21.



Cevap: B

22.



Cevap: D

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

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

$d = 6$

$b.d = 18$

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

Cevap: E

24. $a - b = 2$

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

$+ \; a - b = 2$

$2a = 10$ $a = 5$

$b = 3$

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

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

$K = a.b = 5.3 = 15$

$M = d = 4$

$K + M = 15 + 4 = 19$

Cevap: B

25. $b = 8$

$a.b = 24 \Rightarrow a = 3$

$\frac{b}{d} = 4 \Rightarrow d = 2$

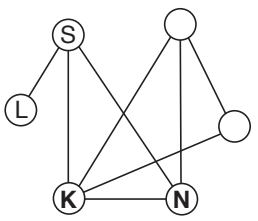
$K = a - b = 3 - 8 = -5$

$M = b.d = 8.2 = 16$

$K + M = -5 + 16 = 11$

Cevap: C

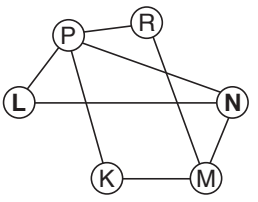
26.



$X = K$; $Y = N$

Cevap: A

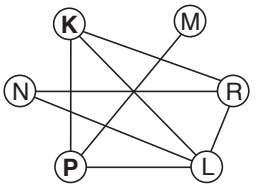
27.



$X = N$; $Y = L$

Cevap: D

28.



$X = P$; $Y = K$

Cevap: E

29. ⋈ = 2

⊕ = 4

⏀ = 5 ⏀▣▽ = 579

▣ = 7

▽ = 9

Cevap: C

30. ⊜ = 2

☺ = 3

♡ = 4 ⋈⊙☺⊜ = 7532

⊙ = 5

⋈ = 7

↑ = 9

Cevap: D

31. $a + c = 23$

$b + c = 33 \rightarrow \underbrace{a + b}_{5c} + 2c = 56$

$a + b = 5c$

$7c = 56$ $\boxed{c = 8}$

$a + c = 23$ $\boxed{a = 15}$

Cevap: D

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

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

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

$\boxed{b = 4}$

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

Cevap: C

33. $c^2 + 1 = 37$

$c^2 = 36$ $b + c = 18$

$\boxed{c = 6}$ $\boxed{b = 12}$

Cevap: A

34. $\square + \triangle + \bigcirc = \hexagon$

$- / \; \hexagon + \square = 5\triangle$

$\triangle + \bigcirc - \hexagon = \hexagon - 5\triangle$

$6\triangle + \bigcirc = 2\hexagon$

Cevap: B

Diğer Sayfaya Geçiniz.

35. $2\triangle + \bigcirc = \triangle + \square \Rightarrow \triangle + \bigcirc = \square$

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

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

Cevap: E

36. $\triangle = 2\bigcirc$

$3\square = 2\triangle + \bigcirc \Rightarrow 3\square = 5\bigcirc$

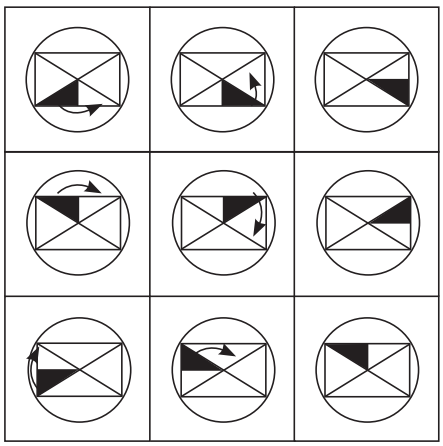
$\square = 5k \quad \bigcirc = 3k \quad \triangle = 6k$

$\triangle\triangle\square = 12k + 5k = 17k$

$\square\bigcirc\bigcirc\bigcirc\bigcirc = 5k + 12k = 17k$

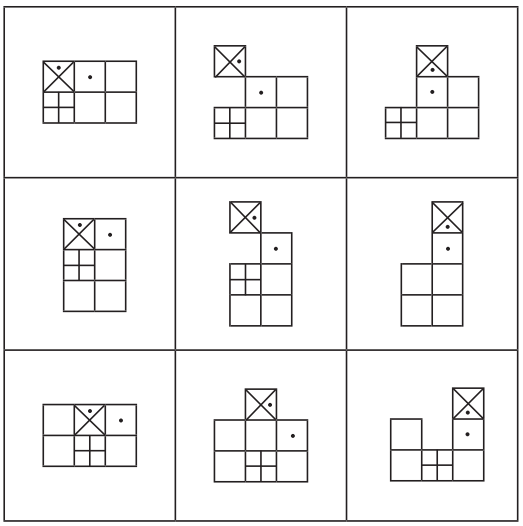
Cevap: D

37.



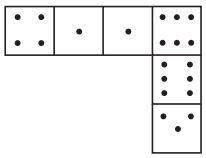
Cevap: B

38.



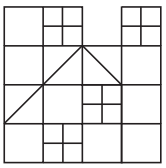
Cevap: E

39.



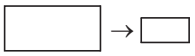
Cevap: C

40.

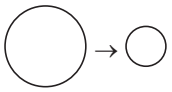


Cevap: A

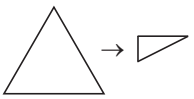
41. A)



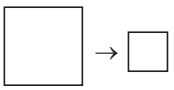
B)



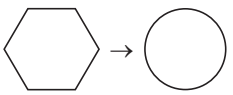
C)



D)

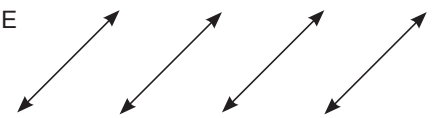


E)

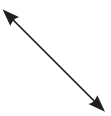


Cevap: E

42. B, C, D, E

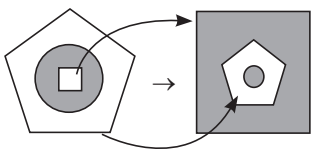


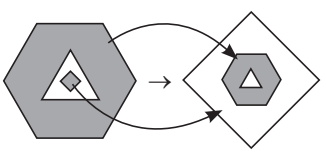
A



Cevap: A

43.





Cevap: E

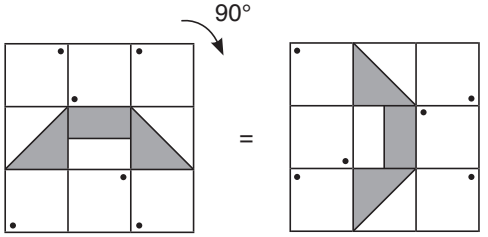
44. $3 + 8 = 11$ $\quad 11.3 = 33$

$5 + 7 = 12$ $\quad 12.3 = 36$

$2 + 7 = 9$ $\quad 9.3 = 27$

Cevap: B

45.



Cevap: E

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

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

Cevap: B

47. $4^x = 5 \qquad 2^x = \sqrt{5}$

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

Cevap: C

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

$9.4^x - 2.\cancel{3.2^x}.\frac{2}{\cancel{3.2^x}} + \frac{4}{9.4^x} = 36$

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

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

Cevap: D

49.

$2x - \cancel{y} + \cancel{z} = 15$

$x - \cancel{y} - \cancel{z} = 0$

$+ \quad x + \cancel{2y} = 13$

$4x = 28 \quad x = 7$

Cevap: B

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

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

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

$s(A \cap B) = 7$

Cevap: E

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

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

$16! = (n + 7)!$

$n + 7 = 16$

$n = 9$

Cevap: D

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

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

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

Cevap: A

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

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

$+$

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

$41 = A + C + E$

Cevap: A

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

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

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

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

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

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

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

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

Cevap: C

Diğer Sayfaya Geçiniz.

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

$x_1 + x_2 = 16 \qquad x_1.x_2 = 4x_2$

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

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

Cevap: E

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

$= \dfrac{1}{a+b} \cdot \dfrac{a+b}{ab} = \dfrac{1}{ab}$

Cevap: D

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

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

$= 6x + 4 - ax - x + b - 3$

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

$a = 5 \quad b = -1$

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

Cevap: B

58. $i^0 = 1$ $\qquad i^{16n-17} = i^3 = -i$

$i^1 = i$ $\qquad i^{12n+44} = i^0 = 1$

$i^2 = -1$ $\qquad i^{8n+5} = i^1 = i$

$i^3 = -i$ $\qquad i^{4n+24} = i^0 = 1$

$\dfrac{-i.1}{i.1} = -1$

Cevap: A

59. $|z| = \sqrt{4+16} = \sqrt{20}$

$|\omega| = \sqrt{a^2+b^2} = \sqrt{20}$

$a^2 + b^2 = 20$

Cevap: A

60. $\tan^3x + \cot^3x = (\tan x + \cot x).(\tan^2x - 1 + \cot^2x)$

$\tan x + \cot x = 4$

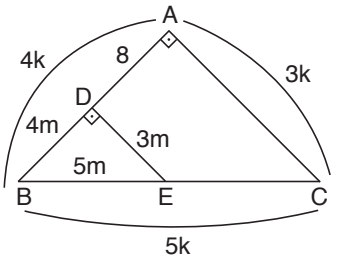
$\tan^2x + 2 + \cot^2x = 16$

$\tan^2x + \cot^2x = 14$

$\tan^3x + \cot^3x = 4.(14-1) = 4.13 = 52$

Cevap: B

61.



$4k - 4m = 8$

$k - m = 2$

$|EC| = 5k - 5m = 5.2 = 10$

Cevap: D

62. $2\log_3x + 3\log_3x + \log_3x = 12$

$6\log_3x = 12$

$\log_3x = 2$

$x = 3^2 = 9$

Cevap: E

63. $\sum_{k=1}^{63} \log_2\left(1 + \dfrac{1}{k}\right) = \sum_{k=1}^{63} \log_2\left(\dfrac{k+1}{k}\right)$

$= \log_2\left(\dfrac{2}{1}\right) + \log_2\left(\dfrac{3}{2}\right) + \log_2\left(\dfrac{4}{3}\right) + ... + \log_2\left(\dfrac{64}{63}\right)$

$= \log_2\left(\dfrac{2}{1}.\dfrac{3}{2}.\dfrac{4}{3}.....\dfrac{64}{63}\right) = \log_2 64 = 6$

Cevap: D

64. $\lim_{x \to -\infty} \dfrac{e^x - \pi^x}{e^{x+1} + \pi^x} = \lim_{x \to -\infty} \dfrac{e^x - \pi^x}{e^x e + \pi^x} = \dfrac{1}{e}$

Cevap: B

65. $\lim_{x \to 4} \dfrac{f(x) - f(4)}{x - 4} = f'(4)$

$f'(x) = 4x - 4.\dfrac{1}{2\sqrt{x}}$

$f'(4) = 16 - 1 = 15$

Cevap: A

66. $f'(x) = -\sin 4x.4 + \cos 4x.4$

$f'\left(\dfrac{\pi}{8}\right) = \underbrace{-\sin\dfrac{\pi}{2}}_{-1}.4 + \underbrace{\cos\dfrac{\pi}{2}}_{0}.4 = -4 + 0 = -4$

Cevap: E

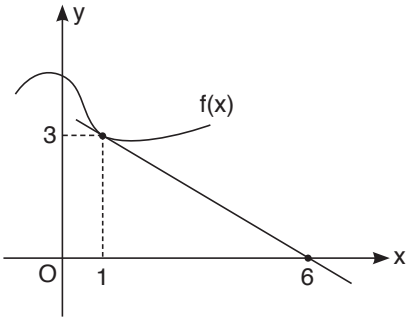
67. $f'(1) = \dfrac{(3.g'(3x) - 2x).x - 1.(g(3x) - x^2)}{x^2}$

$f'(1) = \dfrac{(3.g'(3) - 2) - (g(3) - 1)}{1}$

$f'(1) = \dfrac{7 - 1}{1} = 6$

Cevap: B

68.



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

$h'(1) = f'(1).1 + 2.f(1)$

$= -\dfrac{5}{3} + 2.3 = -\dfrac{5}{3} + 6 = \dfrac{13}{3}$

$= -\dfrac{3}{5} + 2.3 = -\dfrac{3}{5} + 6 = \dfrac{27}{5}$

Cevap: C

69. $\dfrac{dy}{dx} = -\dfrac{12x - 8}{3y^2}$

$\left.\dfrac{dy}{dx}\right|_{\substack{x=1\\y=1}} = -\dfrac{4}{3}$

Cevap: B

70. $\int_{\pi/6}^{\pi/2} \sin^2 x.\cos x dx$

$\sin x = u \Rightarrow \cos x\, dx = du$

$= \int_{\pi/6}^{\pi/2} u^2.du = \left.\dfrac{u^3}{3}\right|_{\pi/6}^{\pi/2}$

$= \left.\dfrac{\sin^3 x}{3}\right|_{\pi/6}^{\pi/2} = \dfrac{\sin^3\frac{\pi}{2}}{3} - \dfrac{\sin^3\frac{\pi}{6}}{3}$

$= \dfrac{1^3}{3} - \dfrac{\left(\frac{1}{2}\right)^3}{3}$

$= \underset{(8)}{\dfrac{1}{3}} - \underset{(1)}{\dfrac{1}{24}} = \dfrac{7}{24}$

Cevap: A

71. $\int_2^4 \dfrac{dx}{3x-5}$

$3x - 5 = u$ dersek $\quad 3.dx = du \Rightarrow dx = \dfrac{du}{3}$

$\int_2^4 \dfrac{1}{u}.\dfrac{du}{3} = \dfrac{1}{3}\int_2^4 \dfrac{1}{u}.du$

$= \dfrac{1}{3}.\ln(u) = \dfrac{1}{3}.\ln|3x-5|\Big|_2^4$

$= \dfrac{1}{3}.(\ln(7) - \ln(1))$

$= \dfrac{1}{3}.\ln 7$

$= \ln\sqrt[3]{7}$

Cevap: E

72. $\underline{\text{Üçüncü sayı}} < \underline{\text{İkinci sayı}} < \underline{\text{Birinci sayı}}$

$x \qquad x+50 \qquad \underbrace{x+50+5}_{x+55}$

Üçünün toplamı:

$x + 55 + x + 50 + x = 675$

$3x + 105 = 675$

$3x = 675 - 105 = 570$

$x = 190$

En büyük sayı: $x + 55 = 190 + 55 = 245$'tir.

Cevap: E

73. Alış fiyatı 100x olsun.

$100x \xrightarrow[\text{kâr } 20x]{\%20} \underset{120x}{\text{Satış}} \xrightarrow[\text{zam } 6x]{\%5 \text{ zam}} \underset{126x}{\text{Son satış}}$

O halde $126x - 100x = 26x$ kâr %26

Cevap: C

74. $\begin{vmatrix} 2 & 3 & 4 \\ 6 & 7 & 8 \\ 9 & 10 & 11 \end{vmatrix} = A$

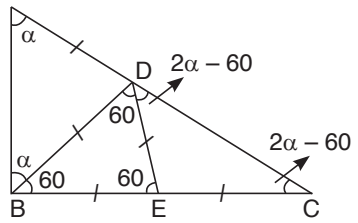
$\begin{vmatrix} -2 & -3 & -4 \\ 6 & 7 & 8 \\ 9 & 10 & 11 \end{vmatrix} = -A$

$A + (-A) = 0$

Cevap: A

Diğer Sayfaya Geçiniz.

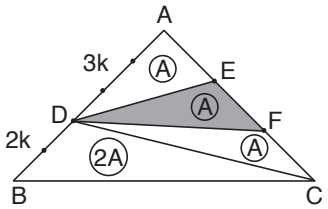
75.



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

Cevap: C

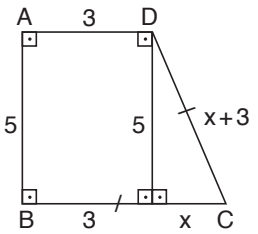
76.



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

Cevap: B

77.



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

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

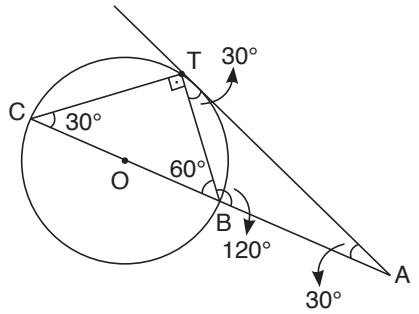
$6x = 16$

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

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

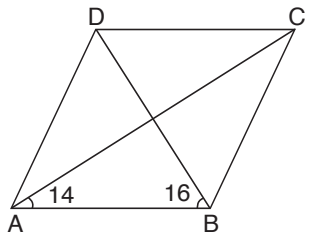
Cevap: E

78.



Cevap: D

79.

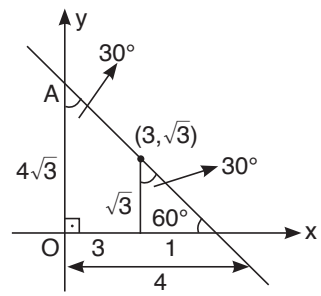


$A(ABCD) = \frac{1}{2}.|AC|.|BD|.\sin 30°$

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

Cevap: B

80.



$A = \frac{\overset{2}{\cancel{4}}.4\sqrt{3}}{\cancel{2}} = 8\sqrt{3}$

Cevap: A