

**Deneme Sınavı**  
Trial Exam

**6**

**ÇÖZÜMLER**

**TAMAMI VIDEO ÇÖZÜMLÜ**

**VIDEO ÇÖZÜM UYGULAMASI İÇİN**





$$1. \underbrace{(a \triangle c)}_e \triangle \underbrace{(e \triangle b)}_c = e \triangle c = \underline{d}$$

Cevap: D

$$2. \underbrace{(a \triangle x)}_e \triangle b = c$$

$$\Rightarrow a \triangle x = e \Rightarrow x = c$$

Cevap: C

$$3. (2 \square 3) \bigcirc 6 = (2^3 - 2) \bigcirc 6$$

$$= 6 \bigcirc 6$$

$$= \frac{1}{6} - \frac{1}{6} = 0$$

Cevap: C

$$4. 1 \otimes (3 \otimes 2) = 1 \otimes (3^2 - 5)$$

$$= 1 \otimes 4$$

$$= 1^2 + 4^3 = 65$$

Cevap: C

$$5. K \equiv 1, R \equiv 2, E \equiv 3, İ \equiv 5, S \equiv 4, A \equiv 6$$

$$\text{ESRAR} \equiv 34262$$

Cevap: A

$$6. A \equiv 4, M \equiv 2, V \equiv 5, İ \equiv 8$$

$$\text{MAVİ} \equiv 2458$$

Cevap: D

$$7. \bigcirc \equiv 4, \blacktriangle \equiv 6, \square \equiv 3, \triangle \equiv 5$$

$$\bigcirc \blacktriangle \square \triangle = 4635$$

Cevap: B

$$8. \Psi \equiv 3, \boxplus \equiv 1, * \equiv 4, \oplus \equiv 9, \triangle \equiv 7$$

$$\triangle \Psi \boxplus = 731$$

Cevap: A

$$9. a + b = 13$$

$$b + c = 11$$

$$+ c + a = 12$$

$$2a + 2b + 2c = 36$$

$$a + \underbrace{b + c}_{11} = 18 \Rightarrow a = 7$$

$$11$$

Cevap: D

$$10. y.z = 2x.y$$

$$x.z = 3z$$

$$\underline{z = 2x}$$

$$x.2x = 32$$

$$\underline{x = 4} \Rightarrow z = 8$$

Cevap: D

11.

x	a	b	c
a		b <sup>3</sup>	
b			b <sup>4</sup>
c			

+	a	b	c
a		6	
b			10
c			

$$a.b = b^3$$

$$b.c = b^4$$

$$\underline{a = b^2}$$

$$\underline{c = b^3}$$

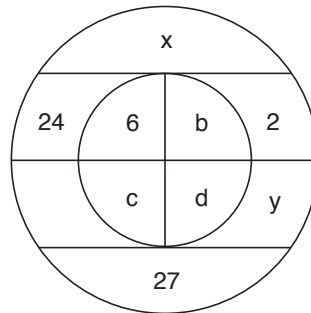
$$a + b = 6 \Rightarrow b^2 + b = 6$$

$$b + c = 10 \Rightarrow b + b^3 = 10$$

$$\} \Rightarrow b = 2 \Rightarrow c = 8$$

Cevap: E

12.



Cevap: D

$$\frac{6}{c} = 2 \Rightarrow c = 3$$

$$6.d = 24 \Rightarrow d = 4$$

$$x = (3 - 4)^6 \Rightarrow \underline{x = 1}$$

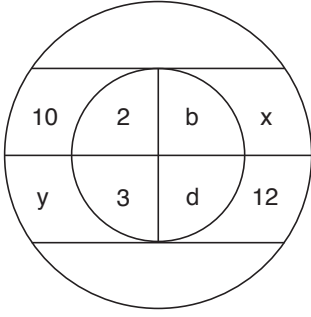
$$(6 - b)^3 = 27 \Rightarrow b = 3$$

$$y = 3.3 \Rightarrow y = 9$$

$$x + y = \underline{10}$$

Cevap: B

13.



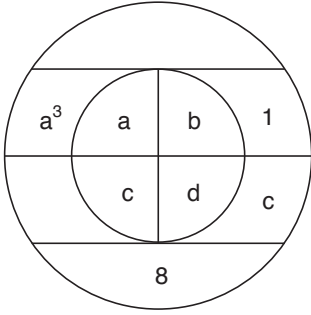
$$2.d = 10 \Rightarrow d = 5$$

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

$$x = \frac{2}{3}, y = \frac{4}{5} \Rightarrow x.y = \frac{8}{15}$$

Cevap: D

14.



$$a.d = a^3 \Rightarrow d = a^2$$

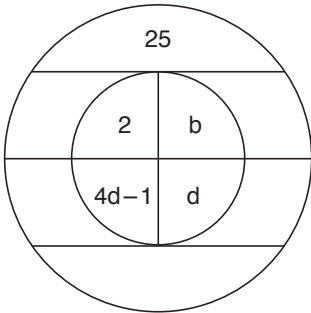
$$\frac{a}{c} = 1 \Rightarrow c = a$$

$$b.c = c \Rightarrow b = 1$$

$$(a - b)^c = (a - 1)^a = 8 \Rightarrow a = 3$$

$$\Rightarrow d = 9$$

15.



$$(c - d)^a = 5$$

$$(4d - 1 - d)^2 = 25$$

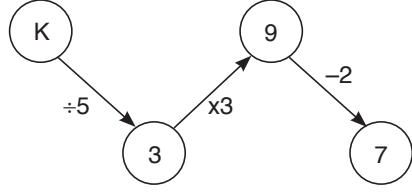
$$(3d - 1)^2 = 25$$

$$3d - 1 = 5$$

$$d = 2$$

Cevap: B

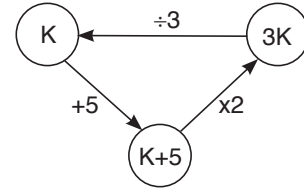
16.



$$\Rightarrow K = 15$$

Cevap: E

17.

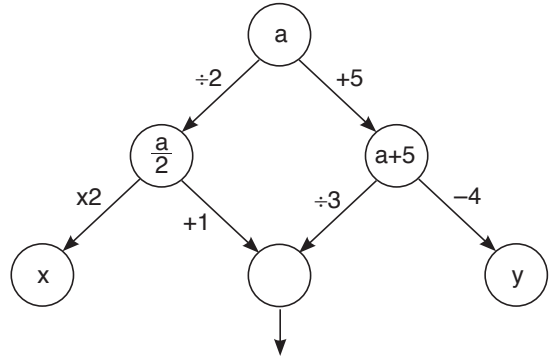


$$\Rightarrow 2(K + 5) = 3K$$

$$\Rightarrow K = 10$$

Cevap: A

18.



$$\frac{a}{2} + 1 = \frac{a+5}{3}$$

$$3a + 6 = 2a + 10$$

$$a = 4$$

$$x = 2 \cdot \frac{a}{2}$$

$$x = a$$

$$x = 4$$

$$y = a + 5 - 4$$

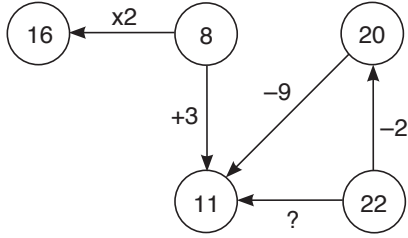
$$y = a + 1$$

$$y = 4 + 1$$

$$y = 5 \quad x + y = 9$$

Cevap: E

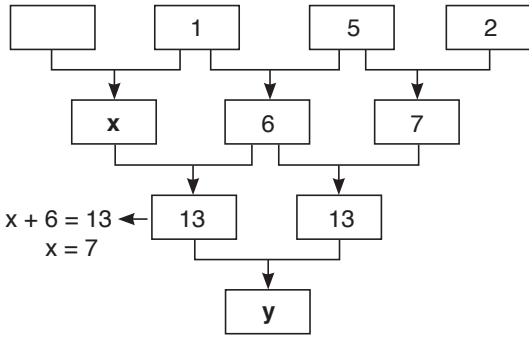
19.



$? \equiv +2$

Cevap: E

20.

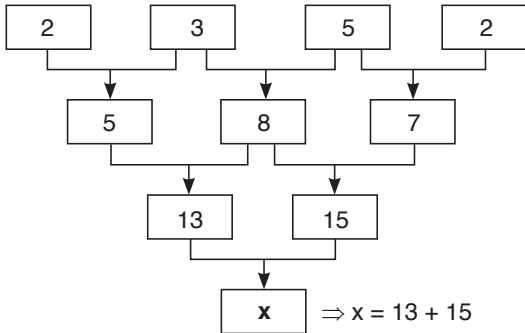


$x + 6 = 13$   
 $x = 7$

$y = 13 + 13$   
 $y = 26$   
 $x + y = 33$

Cevap: C

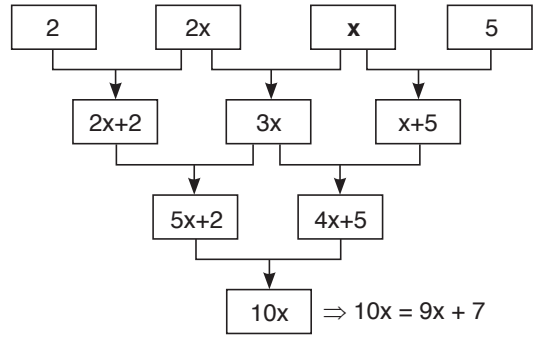
21.



$\Rightarrow x = 13 + 15$   
 $x = 28$

Cevap: B

22.

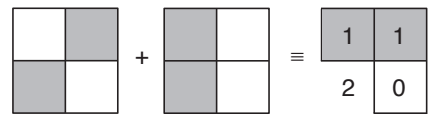


Cevap: C

23. C = 2 , N = 3 , A = 0  
ENIAC = 13502

Cevap: E

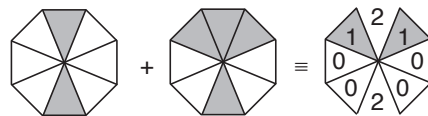
24. I.



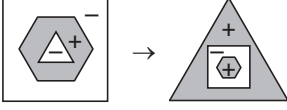
II.

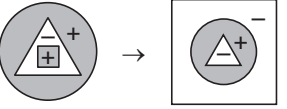


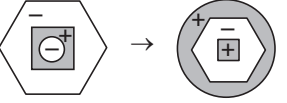
III.



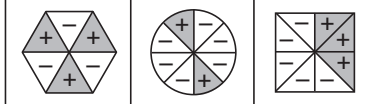
Cevap: B

25. I. 

II. 

III. 

Cevap: D

26. 

I.	$\frac{+++}{3}$	$\frac{--}{2}$	$\frac{+++}{3}$
II.	$\frac{---}{3}$	$\frac{-----}{6}$	$\frac{---}{5}$
III.	$3 + 3 = 6$	$2 + 6 = 8$	$3 + 5 = 8$

$x = 6, y = 6, z = 3$   
 $\Rightarrow x + y + z = 15$

Cevap: D

27. 

3	0	4	49	$\rightarrow 3 + 0 + 4 = 7, 7^2 = 49$
2	1	?	36	$\rightarrow 2 + 1 + ? = 6, 6^2 = 36$
4	2	5	121	$\rightarrow 4 + 2 + 5 = 11, 11^2 = 121$
2	2	6	100	$\rightarrow 2 + 2 + 6 = 10, 10^2 = 100$

$? = 3$

Cevap: C

28. 

4	6	x	2
24	18	40	14
6	3	5	7

$4.6 = 24$   
 $6.3 = 18$   
 $x.5 = 40 \Rightarrow x = 8 \Rightarrow x^2 = 64$   
 $2.7 = 14$

Cevap: A

29. 

			x
			x
			x
			x

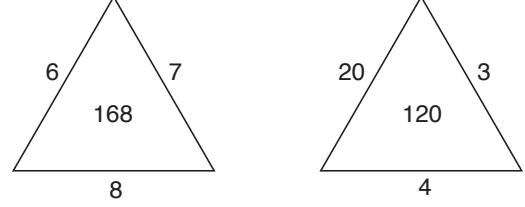
λ			
y			
λ			
y			

 $\Rightarrow$ 

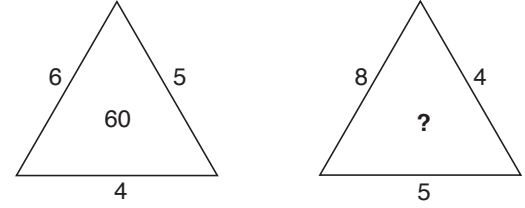
λ			
Σ			
			x

Σ	z	Σ	z

Cevap: B

30. 

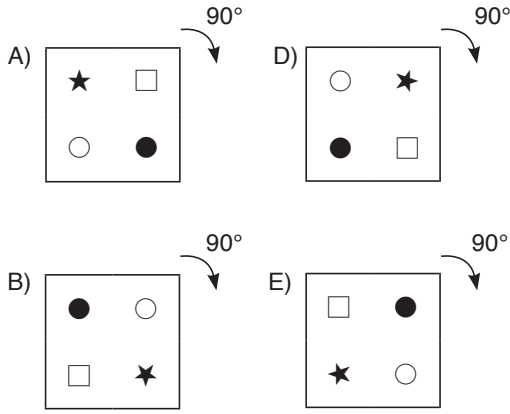
$\frac{6.7.8}{2} = 168$        $\frac{20.3.4}{2} = 120$



$\frac{6.5.4}{2} = 60$        $\frac{8.4.5}{2} = 80$

Cevap: C

31.



Cevap: C

32.

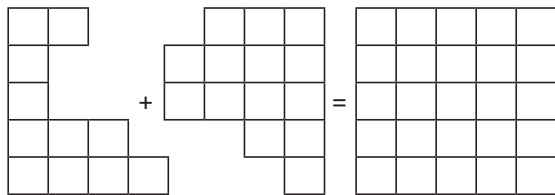
I.  $\triangle + \square \equiv \triangle + \triangle + \triangle$   
 $\Rightarrow \square \equiv \triangle + \triangle$

II.  $\bigcirc + \bigcirc + \square \equiv \square + \square + \triangle + \triangle$   
 $\Rightarrow \bigcirc \equiv \triangle + \triangle$

III.  $\bigcirc + \bigcirc + \triangle$   
 $\Rightarrow \triangle + \triangle + \triangle + \triangle + \triangle \equiv \square + \square + \triangle$

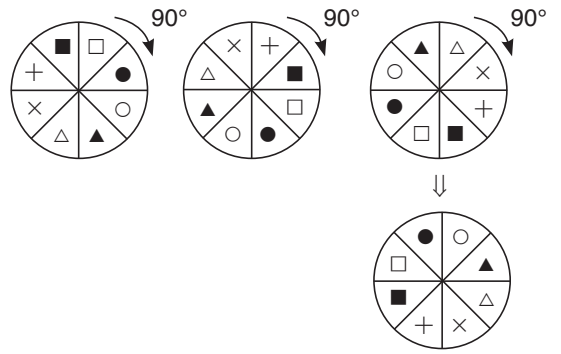
Cevap: E

33.



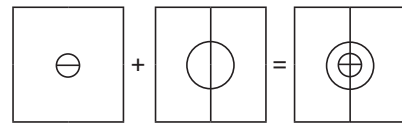
Cevap: C

34.



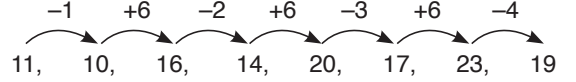
Cevap: D

35.



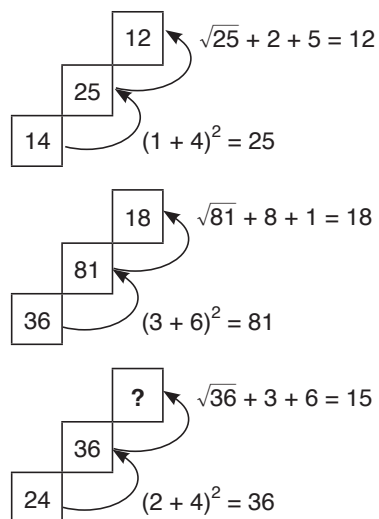
Cevap: B

36.



Cevap: D

37.



Cevap: B

38.

5	4	1	3	2
3	1	x = 2	5	4
4	2	3	1	5
1	5	4	2	3
2	3	5	4	1

⇒ x = 2

Cevap: B

39.

1	5	4	3	2
4	1	2	5	3
2	3	5	x = 4	1
3	4	1	2	5
5	2	3	1	4

⇒ x = 4

Cevap: D

40. I.  $\triangle \triangle \square \square \equiv \square \square \square \square$ 

$$\Rightarrow \triangle \triangle \equiv \square \square$$

II.  $\square \square \square \square \equiv \triangle \triangle \square \square$ 

$$\Rightarrow \square \square \equiv \triangle \triangle$$

①

$$\Rightarrow \square \square \equiv \square \square$$

$$\Rightarrow \square \equiv \square \quad \textcircled{2}$$

III.  $\square \square + ? \equiv \triangle \triangle \square \square$ 

①, ②

$$\square \square \square \square + ? \equiv \square \square \square \square$$

$$\Rightarrow ? \equiv \square$$

41. I.  $\square \square \square \equiv \triangle \triangle \square$ II.  $\square \triangle \triangle \equiv \square \square \square \square$ 

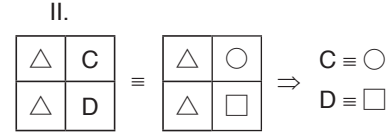
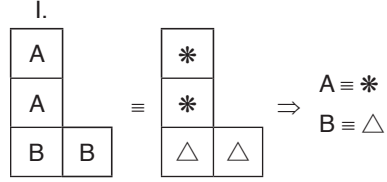
$$\textcircled{1} \Rightarrow \square \square \square \square \equiv \square \square \square \square$$

$$\Rightarrow \square \equiv \square$$

III.  $\square \triangle \square \equiv \square \triangle \square \equiv ?$ 

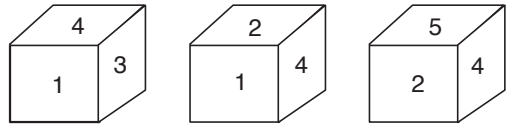
Cevap: A

42.



Cevap: C

43.



I.

II.

III.

II. şekilden dolayı 2 nin karşısı (A) 1 veya 4 olamaz.  
(Accordingly II, opposite of 2 (A) can not be 1 or 4)

III. şekilden dolayı 5 in karşısı (B) 4 olamaz.  
(Accordingly III, opposite of 5 (B) can not 4).

Cevap: D

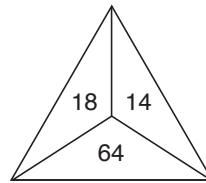
44.

$$\rightarrow 6 \cdot \left( 3 \cdot 4 + \frac{1}{3} + 2^4 \right)$$

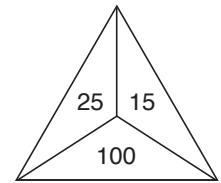
$$= 6 \cdot (12 + 3 + 16) = 186$$

Cevap: A

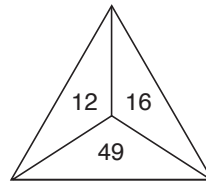
45.



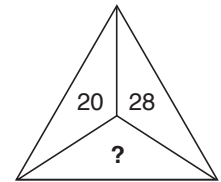
$$\left( \frac{18 + 14}{4} \right)^2 = 64$$



$$\left( \frac{25 + 15}{4} \right)^2 = 100$$



$$\left( \frac{12 + 16}{4} \right)^2 = 49$$



$$\left( \frac{20 + 28}{4} \right)^2 = 144$$

Cevap: E



$$46. a, \frac{1}{b} \in \mathbb{N}, a + \frac{1}{b} = 15 \Rightarrow$$

$$(a, \frac{1}{b}) = \begin{cases} (0, 15) \\ (1, 14) \\ \vdots \\ (7, 8) \\ (8, 7) \\ \vdots \\ (14, 1) \end{cases}$$

$$\max\left(\frac{a}{b}\right) = \frac{7}{1} = 7.8 = 56$$

Cevap: E

$$47. \left(2 - \frac{1}{3}\right) \cdot \left(1 - \frac{1 + \frac{1}{2}}{2}\right)$$

$$\left(2 - \frac{2}{3}\right) \cdot \left(1 - \frac{1 + \frac{1}{4}}{2}\right)$$

$$\left(\frac{4}{3}\right) \cdot \left(1 - \frac{5}{4}\right)$$

$$\frac{4}{3} \cdot \left(1 - \frac{5}{8}\right) = \frac{4}{3} \cdot \frac{3}{8} = \frac{1}{2}$$

Cevap: C

$$48. \frac{0,200 - 0,025}{0,5} = \frac{0,175}{0,5} = \frac{175}{500} = \frac{7}{20}$$

Cevap: C

$$49. \left(\frac{\sqrt{3} + 1 + \sqrt{3} - 1}{\sqrt{3} + 1 - \sqrt{3} + 1}\right)^{\frac{1}{2}} = \left(\frac{2\sqrt{3}}{2}\right)^{\frac{1}{2}} = (\sqrt{3})^{\frac{1}{2}} = \sqrt[4]{3}$$

Cevap: B

$$50. \frac{\sqrt{36}}{\sqrt{\frac{16}{100}} + \sqrt{\frac{36}{100}}} = \frac{6}{\frac{4}{10} + \frac{6}{10}} = 6$$

Cevap: A

$$51. \frac{x}{y} = 4 \Rightarrow \frac{y}{x} = \frac{1}{4}$$

$$\left(\frac{1}{4}\right)^n = 32 \Rightarrow 2^{-\frac{2}{n}} = 2^5$$

$$\Rightarrow -\frac{2}{n} = 5$$

$$\Rightarrow n = -\frac{2}{5}$$

Cevap: A

$$52. \frac{3^{a-b}}{3^{b-a}} = 9 \Rightarrow 3^{2a-2b} = 9$$

$$\Rightarrow 3^{2(a-b)} = 3^2$$

$$\Rightarrow a - b = 1$$

$$a^2 - b^2 = 45 \Rightarrow \frac{(a-b)(a+b)}{1 \cdot 45} = 45$$

$$a + b = 45$$

$$+ a - b = 1$$

$$2a = 46$$

$$a = 23 \Rightarrow b = 22$$

$$a \cdot b = 506$$

Cevap: D

$$53. 44 \cdot 2^x + 16 \cdot 2^x = 480$$

$$60 \cdot 2^x = 480$$

$$2^x = 8 \Rightarrow x = 3$$

Cevap: C

$$54. \frac{1}{x} + \frac{x-1}{x} + \frac{x+1}{x+2} = \frac{4}{3}$$

$$1 + \frac{x+1}{x+2} = \frac{4}{3}$$

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

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

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

Cevap: B

$$55. \frac{1}{a} + \frac{1}{b} = 6 \Rightarrow \frac{a+b}{a.b} = 6 \quad (a+b=2)$$

$$\Rightarrow \frac{2}{a.b} = 6 \Rightarrow a.b = \frac{1}{3}$$

Cevap: E

$$56. 2 = \frac{1 - \frac{1}{x}}{1 + \frac{1}{x}} = \frac{\frac{x-1}{x}}{\frac{x+1}{x}} = \frac{x-1}{x+1} \cdot \frac{x}{x+1}$$

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

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

$$x = -3$$

Cevap: E

$$57. \left(x^2 - \frac{4}{x^2}\right) \cdot \left(\frac{x}{3x+2}\right) = \frac{x^2+2}{x}$$

$$\Rightarrow \left(\frac{x^4-4}{x^2}\right) \cdot \left(\frac{x}{3x+2}\right) \cdot \left(\frac{x}{x^2+2}\right) = 1$$

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

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

$$\Rightarrow x^2 - 3x - 4 = 0$$

$$\Rightarrow (x-4)(x+1) = 0$$

$$\Rightarrow x = 4 \vee x = -1 \quad (x > 0)$$

$$x = 4$$

Cevap: B

$$58. \frac{\cos x}{\sin x} - \frac{3 \sin x}{\cos x} = \frac{1}{2 \sin x \cos x}$$

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

$$\Rightarrow 2 \cos^2 x - 6 \underbrace{\sin^2 x}_{(1 - \cos^2 x)} = 1$$

$$\Rightarrow 2 \cos^2 x - 6 + 6 \cos^2 x = 1$$

$$\Rightarrow 8 \cos^2 x = 7$$

$$\Rightarrow \cos^2 x = \frac{7}{8} \Rightarrow \cos x = \frac{\sqrt{7}}{\sqrt{8}} = \frac{\sqrt{14}}{4}$$

Cevap: D

$$59. \sin x \cdot \cos 2x = \frac{1}{9 \cos x} \Rightarrow \cos x \cdot \sin x \cdot \cos 2x = \frac{1}{9}$$

$$\Rightarrow \frac{2 \cos x \cdot \sin x}{\sin 2x} \cdot \cos 2x = \frac{2}{9} \Rightarrow \frac{2 \sin 2x \cdot \cos 2x}{\sin 4x} = \frac{4}{9}$$

$$\Rightarrow \sin 4x = \frac{4}{9}$$

Cevap: C

$$60. g(x) = x^3 \cdot \left(2 \cdot \frac{1}{x^3} - 3 \cdot \frac{1}{x^2} + 5 \cdot \frac{1}{x} - 3\right)$$

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

$$\Rightarrow g(2) = 2 - 6 + 20 - 24$$

$$\Rightarrow g(2) = -8$$

Cevap: A

$$61. f(g(x)) = f(x) \cdot g(x)$$

$$\Rightarrow 2g(x) + 3 = (2x + 3) \cdot g(x)$$

$$\Rightarrow 2g(1) + 3 = 5g(1)$$

$$\Rightarrow 3g(1) = 3$$

$$\Rightarrow g(1) = 1$$

Cevap: C

$$62. x^4 + ax^2 + b = (x^2 + x + 1) \cdot B(x) \quad (x^2 = -x - 1)$$

$$(-x - 1)^2 + a(-x - 1) + b = 0$$

$$x^2 + 2x + 1 - ax - a + b = 0$$

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

$$\Rightarrow a = 1, \quad b = 1$$

$$a.b = 1$$

Cevap: B

$$63. \log_2(\log_3(3x + 6)) = 2$$

$$\log_3(3x + 6) = 4 \Rightarrow 3x + 6 = 81$$

$$\Rightarrow 3x = 75$$

$$\Rightarrow x = 25$$

Cevap: C

$$64. \log_5^{20} = \log_5^{(4 \cdot 5)} = \log_5^4 + \underbrace{\log_5^5}_1$$

$$= \log_5^{2^2} + 1$$

$$= 2\log_5^2 + 1 \quad (\log_2^5 = x \Rightarrow \log_5^2 = \frac{1}{x})$$

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

Cevap: A

$$65. \lim_{x \rightarrow \frac{\pi}{3}} \frac{\cos x - \frac{\sqrt{3}}{2}}{\sin x - \frac{1}{2}} = \frac{\cos \frac{\pi}{3} - \frac{\sqrt{3}}{2}}{\sin \frac{\pi}{3} - \frac{1}{2}}$$

$$= \frac{\frac{1}{2} - \frac{\sqrt{3}}{2}}{\frac{\sqrt{3}}{2} - \frac{1}{2}} = -1$$

Cevap: E

$$66. \lim_{x \rightarrow -\infty} (5^x + 3^x + 2) = \left[ \underbrace{5^{-\infty}}_{5^0} + \underbrace{3^{\infty}}_{3^{\infty}} + 2 \right]$$

$$= 1 + 0 + 2 = 3$$

Cevap: B

$$67. \lim_{x \rightarrow 0} \frac{\tan x - x}{\sin 2x} \rightarrow \frac{0}{0}$$

$$\frac{1 + \tan^2 x - 1}{2 \cos 2x} \quad (x \rightarrow 0) \quad \frac{1 + \tan 0 - 1}{2 \cos 0} = \frac{0}{2} = 0$$

Cevap: C

$$68. z = x + yi$$

$$z + |z| = x + yi + \sqrt{x^2 + y^2} = 3 - 2i$$

$$\Rightarrow y = -2 \quad x + \sqrt{x^2 + y^2} = 3$$

$$\Rightarrow x + \sqrt{x^2 + 4} = 3$$

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

$$\Rightarrow x^2 + 4 = 9 - 6x + x^2$$

$$\Rightarrow 6x = 5 \quad x = \frac{5}{6}$$

$$\Rightarrow z = \frac{5}{6} - 2i$$

Cevap: C

$$69. f'(x) = 3 \cdot [2 + (x + x^2)^4]^2 \cdot 4 \cdot (x + x^2)^3 \cdot (1 + 2x)$$

$$\Rightarrow f'(1) = 3 \cdot [18]^2 \cdot 4 \cdot 2^3 \cdot 3$$

$$\Rightarrow f'(1) = 3^1 \cdot 2^2 \cdot 3^4 \cdot 2^2 \cdot 2^3 \cdot 3^1 = 3^6 \cdot 2^7$$

Cevap: B

$$70. f'(x) = \frac{2 \cdot (-2 \sin 2x) \cdot \cos 2x + 3 \cdot e^{3x}}{\cos^2 2x + e^{3x}}$$

$$\Rightarrow f'(0) = \frac{3}{2}$$

Cevap: D

$$71. \frac{dy}{dx} = -\frac{2x \cdot \cos(x^2 - 1)}{3y^2}$$

$$\frac{dy}{dx} \Big|_{(-1,2)} = -\frac{-2 \cdot \cos 0}{12} = \frac{1}{6}$$

Cevap: E

$$72. \frac{dy}{dx} = \frac{dy}{du} \cdot \frac{du}{dx} = \frac{4e^{2u} - 1}{2e^{2u} + e^u} = \frac{(2e^u - 1)(2e^u + 1)}{e^u(2e^u + 1)}$$

$$= \frac{2e^u - 1}{e^u}$$

u = ln2 yazalım.

$$\frac{dy}{dx} \Big|_{u=\ln 2} = \frac{2 \cdot e^{\ln 2} - 1}{e^{\ln 2}} = \frac{2 \cdot 2 - 1}{2} = \frac{3}{2}$$

Cevap: A

$$73. f''(x) = 6x - 4 \Rightarrow f'(x) = 3x^2 - 4x + c_1$$

$$f'(0) = 3 \Rightarrow c_1 = 3$$

$$f'(x) = 3x^2 - 4x + 3$$

$$f(x) = x^3 - 2x^2 + 3x + c_2 \quad f(0) = -5 \Rightarrow c_2 = -5$$

$$f(x) = x^3 - 2x^2 + 3x - 5 \Rightarrow f(1) = -3$$

Cevap: B

$$74. 3 + 7 = \int_0^5 f(x) dx + \int_0^5 x \cdot f'(x) dx = \int_0^5 [f(x) + x \cdot f'(x)] dx$$

$$10 = x \cdot f(x) \Big|_0^5$$

$$10 = 5 \cdot f(5) - 0 \cdot f(0)$$

$$2 = f(5)$$

Cevap: B

75. Basamak sayısı x olsun.

Çıkarken attığı adım sayısı  $\frac{x}{3}$

İnerken attığı adım sayısı  $\frac{x}{2}$

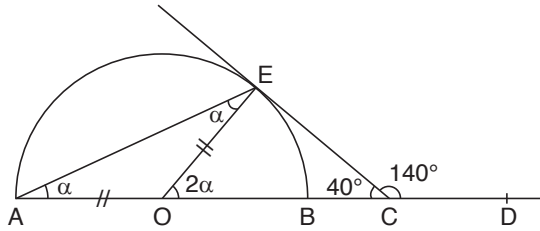
$$\frac{x}{2} = \frac{x}{3} + 4$$

$$\frac{x}{2} - \frac{x}{3} = 4 \Rightarrow \frac{3x - 2x}{6} = 4$$

$x = 24$ 'tür.

Cevap: A

76.

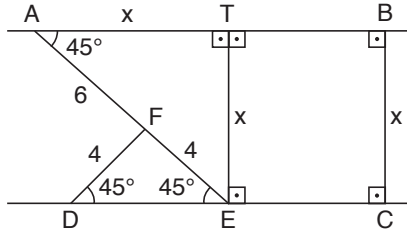


$$90 + 2\alpha + 40 = 180$$

$$\alpha = 25$$

Cevap: A

77.



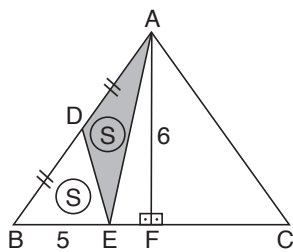
$$x^2 + x^2 = 100$$

$$x^2 = 50$$

$$x = 5\sqrt{2}$$

Cevap: B

78.



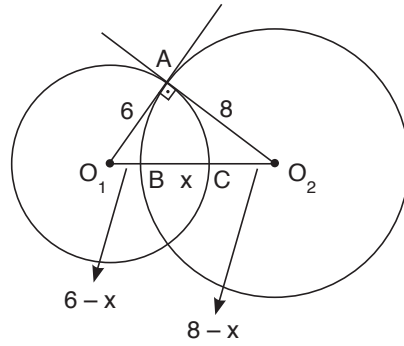
$$A(\text{ABE}) = 2S = \frac{6 \cdot 5}{2}$$

$$\Rightarrow 2S = 15$$

$$S = \frac{15}{2}$$

Cevap: E

79.



$$|O_1O_2|^2 = 6^2 + 8^2$$

$$|O_1O_2| = 10 \text{ br}$$

$$|BC| = x \text{ br} \Rightarrow |O_1B| = (6 - x) \text{ br}$$

$$|O_2C| = (8 - x) \text{ br}$$

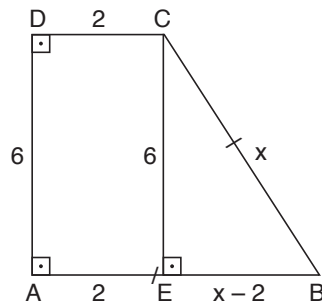
$$|O_1O_2| = |O_1B| + |BC| + |O_2C|$$

$$10 = 6 - x + x + 8 - x \Rightarrow x = 4 \text{ br}$$

Cevap: B

TASARI EĞİTİM YAYINLARI

80.



$$x^2 = (x - 2)^2 + 6^2$$

$$x^2 = x^2 - 4x + 4 + 36$$

$$4x = 40$$

$$x = 10 \text{ br}$$

Cevap: E