

$$1. \quad (-2)^2 - (-3^3) + (-5^2)$$

$$4 + 27 - 25 = 6$$

Cevap: B

$$2. \quad \frac{(-1)^{2024} - (-1)^{2023}}{(-1)^{2022} \cdot (-1)^{2021}} = \frac{1+1}{1 \cdot -1} = \frac{2}{-1} = -2$$

Cevap: E

$$3. \quad (3^{-2} + 4^0)^{-1} \cdot \left(\frac{3}{5}\right)^{-2}$$

$$\left(\frac{1}{9} + 1\right)^{-1} \cdot \left(\frac{5}{3}\right)^2$$

$$\left(\frac{10}{9}\right)^{-1} \cdot \frac{25}{9}$$

$$\frac{9}{10} \cdot \frac{25}{9} = \frac{5}{2}$$

Cevap: D

$$4. \quad \frac{5^{-2} - 7^{-2}}{10^{-2} - 14^{-2}} = \frac{5^{-2} - 7^{-2}}{2^{-2}(5^{-2} - 7^{-2})} = \frac{1}{2^{-2}} = 2^2 = 4$$

Cevap: A

$$5. \quad \frac{5^4 \cdot 9^2}{250^2 - 25^2} = \frac{5^4 \cdot 9^2}{25^2(10^2 - 1)} = \frac{5^4 \cdot 9^2}{5^4 \cdot 99} = \frac{81}{99}$$

$$= \frac{9}{11}$$

Cevap: C

$$6. \quad \frac{19^2 - 2^3}{5^2 + 4^2} \cdot \frac{19^2 + 2^3}{5^2 - 4^2}$$

$$\frac{361 - 8}{25 + 16} \cdot \frac{361 + 8}{25 - 16} = \frac{353}{41} \cdot \frac{369}{9}$$

$$= \frac{353 \cdot 369}{369}$$

$$= 353$$

Cevap: D

$$7. \quad \frac{2^7 + 2^{10} + 2^{15}}{2^5 + 2^8 + 2^{13}}$$

$$= \frac{2^7(1 + 2^3 + 2^8)}{2^5(1 + 2^3 + 2^8)} = 2^2 = 4$$

Cevap: B

$$8. \quad \frac{50 \cdot 10^{-4} + 0,3 \cdot 10^{-3}}{10^{-6}}$$

$$\frac{50 \cdot 10^{-4} + 3 \cdot 10^{-4}}{10^{-6}} = \frac{53 \cdot 10^{-4}}{10^{-6}}$$

$$= 53 \cdot 10^{-4+6}$$

$$= 53 \cdot 10^2$$

$$= 5300$$

Cevap: B

9. $a^b + b^a = (-2)^{-1} + (-1)^{-2} = -\frac{1}{2} + 1 = \frac{1}{2}$

Cevap: D

10. $\frac{(-x^2)^4 \cdot (-x^3)^3}{(x^{-2})^{-5} \cdot (-x^5)^{-3}} = \frac{x^8 \cdot -x^9}{x^{10} \cdot -x^{15}} = \frac{-x^{17}}{-x^{-5}}$
 $= x^{17+5}$
 $= x^{22}$

Cevap: B

11. $\frac{3^a + 3^{a+b} \cdot (3^{-a} - 3^{-b})}{3^{b-a}}$
 $\frac{3^a + 3^{a+b} \cdot 3^{-a} - 3^{a+b} \cdot 3^{-b}}{3^{b-a}} = \frac{3^a + 3^b - 3^a}{3^{b-a}}$
 $= \frac{3^b}{3^{b-a}} = 3^{b-b+a}$
 $= 3^a$

Cevap: B

12.

2^{-4}	2^{-3}	2^{-2}
2^1	2^2	2^3
2^4	2^5	2^6

2^{-7}	2^2
2^3	2^3
2^9	2^6

2^{-7}	2^{-2}
2^{12}	2^9

$$\Rightarrow \frac{x}{y} = \frac{2^{12}}{2^{-7}} = 2^{19}$$

Cevap: A

1. I. $(-3)^4 \neq 81$ çünkü $(-3)^4 = 81$

II. $(-3)^{-4} = \frac{1}{81}$

III. $-3^4 \neq 81$ çünkü $-3^4 = -81$

Cevap: B

$$2. \frac{3^6}{3^6} = \frac{1+3+3^2+\dots+3^6}{\frac{1}{(3^6)} + \frac{1}{(3^5)} + \frac{1}{(3^4)} + \dots + \frac{1}{(3^1)}} = \frac{1+3+3^2+\dots+3^6}{\frac{3^6+3^5+\dots+1}{3^6}} = \frac{1}{\frac{1}{3^6}} = 3^6$$

Cevap: C

$$3. \frac{3^{4n+2}}{9^{2n-1}} = \frac{3^{4n+2}}{(3^2)^{2n-1}} = \frac{3^{4n+2}}{3^{4n-2}} = 3^{4n+2-4n+2} = 3^4$$

Cevap: D

4. $x = 2.2.2.2.2.2 = 2^6 = 64$
 $y = 6.6 = 6^2 = 36$
 $\Rightarrow x - y = 64 - 36 = 28$

Cevap: C

5. $A = (0,04 \cdot 10^{10})^3 \cdot (0,5 \cdot 10^{-3})^4$
 $A = (4 \cdot 10^{-2} \cdot 10^{10})^3 \cdot (5 \cdot 10^{-1} \cdot 10^{-3})^4$
 $A = (4 \cdot 10^8)^3 \cdot (5 \cdot 10^{-4})^4$
 $A = 4^3 \cdot 10^{24} \cdot 5^4 \cdot 10^{-16}$
 $A = 2^6 \cdot 5^4 \cdot 10^{24-16}$
 $A = 2^2 \cdot 2^4 \cdot 5^4 \cdot 10^8$
 $A = 4 \cdot 10^4 \cdot 10^8$
 $A = 4 \cdot 10^{12} \Rightarrow 13$ basamaklı

Cevap: D

6. • $1 + 3^{-x} = a$
 $3^{-x} = a - 1 \Rightarrow 3^x = \frac{1}{a-1}$
 • $3^x - 1 = \frac{1}{a-1} - 1 = \frac{1-a+1}{a-1} = \frac{2-a}{a-1}$

Cevap: B

7. $\frac{\boxed{5}^{\boxed{1}} + \boxed{2}^{\boxed{1}}}{\boxed{2}^{\boxed{4}} + \boxed{3}^{\boxed{2}}} = \frac{5^{1-1} + 2^{1+1}}{2^{4-1} + 3^{2+1}} = \frac{5^0 + 2^2}{2^3 + 3^5} = \frac{1+4}{8+27} = \frac{5}{35} = \frac{1}{7}$

Cevap: A

8. $9^{x-3} = 27^{x+1}$
 $(3^2)^{x-3} = (3^3)^{x+1}$
 $3^{2x-6} = 3^{3x+3}$
 $2x - 6 = 3x + 3$
 $-9 = x$

Cevap: B

$$9. (0,25)^{2n-1} = (0,125)^{3n+1}$$

$$\left(\frac{25}{100}\right)^{2n-1} = \left(\frac{125}{1000}\right)^{3n+1}$$

$$\left(\frac{1}{4}\right)^{2n-1} = \left(\frac{1}{8}\right)^{3n+1}$$

$$(2^{-2})^{2n-1} = (2^{-3})^{3n+1}$$

$$2^{-4n+2} = 2^{-9n-3}$$

$$-4n + 2 = -9n - 3$$

$$9n - 4n = -3 - 2 \Rightarrow 5n = -5$$

$$n = -1$$

Cevap: C

$$10. 5^{x+2} + \frac{1}{5^{1-x}} = \frac{126}{25}$$

$$\frac{5^{x+2} \cdot 5^{1-x} + 1}{5^{1-x}} = \frac{126}{25}$$

$$\frac{5^{x+2+1-x} + 1}{5^{1-x}} = \frac{126}{5^2}$$

$$\frac{5^3 + 1}{5^{1-x}} = \frac{16}{5^2}$$

$$\frac{126}{5^{1-x}} = \frac{126}{5^2} \Rightarrow 5^{1-x} = 5^2$$

$$1 - x = 2$$

$$x = -1$$

Cevap: B

$$11. 9^x + 9^y = 20 \rightarrow 16 + 9^y = 20$$

$$+ 9^x - 9^y = 12 \quad 9^y = 4$$

$$2 \cdot 9^x = 32$$

$$9^x = 16$$

$$\Rightarrow 9^x = 16 \Rightarrow 3^x = 4$$

$$\Rightarrow 9^y = 4 \Rightarrow 3^y = 2$$

$$\text{O halde } 3^x \cdot 3^y = 4 \cdot 2$$

$$3^{x+y} = 8 \text{ olur.}$$

Cevap: C

$$12. 2^x \cdot 3^y = 108$$

$$x \quad 2^y \cdot 3^x = 72$$

$$2^{x+y} \cdot 3^{x+y} = 36 \cdot 2 \cdot 36 \cdot 3$$

$$(2 \cdot 3)^{x+y} = 6^2 \cdot 6 \cdot 6^2$$

$$6^{x+y} = 6^5$$

$$\Rightarrow x + y = 5 \text{ olur.}$$

Cevap: C

$$13. (5^x - 1)(5^x + 1)(25^x + 1) = 124$$

$$(25^x - 1)(25^x + 1) = 124$$

$$625^x - 1 = 124$$

$$625^x = 125$$

$$5^{4x} = 5^3$$

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

Cevap: A

$$14. \left(\frac{\frac{2}{3^x} + \frac{4}{x}}{81^{\frac{2}{x} + \frac{4}{x}}}\right)^{-\frac{1}{9}} = 3^{\frac{2}{5}}$$

$$\left(\frac{\frac{6}{3^x} + \frac{6}{x}}{81^{\frac{6}{x}}}\right)^{-\frac{1}{9}} = 3^{\frac{2}{5}}$$

$$\left(\frac{\frac{6}{3^x} + \frac{24}{x}}{3^x}\right)^{-\frac{1}{9}} = 3^{\frac{2}{5}}$$

$$\left(\frac{6}{3^x} - \frac{24}{x}\right)^{-\frac{1}{9}} = 3^{\frac{2}{5}}$$

$$3^{\frac{-18}{x} - \frac{-1}{9}} = 3^{\frac{2}{5}} \Rightarrow \frac{18}{9x} = \frac{2}{5}$$

$$18x = 90$$

$$x = 5$$

Cevap: E

$$1. \quad \begin{aligned} 2^a = 125 & \Rightarrow 2^a = 5^3 \\ 16 = 5^b & \Rightarrow 2^4 = 5^b \\ & \Rightarrow \frac{a}{4} \times \frac{3}{b} \\ & a \cdot b = 12 \text{ olur.} \end{aligned}$$

Cevap: C

$$2. \quad \begin{aligned} (a+2)^{a-1} &= 1 \\ 1) \quad a+2 &= 1 \Rightarrow a = -1 \\ 2) \quad a-1 &= 0 \Rightarrow a = 1 \\ 3) \quad a+2 &= -1 \Rightarrow a = -3 \\ &\Rightarrow a \text{ değerleri çarpımı} \\ & -1 \cdot 1 \cdot -3 = 3 \text{ olur.} \end{aligned}$$

Cevap: C

$$3. \quad \begin{aligned} (2n-12)^6 &= (n+6)^6 \\ 1) \quad 2n-12 &= n+6 & 2) \quad 2n-12 &= -n-6 \\ n &= 18 & 3n &= 6 \\ & & n &= 2 \end{aligned}$$

$\Rightarrow n$ değerleri toplamı
 $18 + 2 = 20$ olur.

Cevap: C

$$4. \quad \begin{aligned} (4a-6)^{21} &= (3a+3)^{21} \\ \Rightarrow 4a-6 &= 3a+3 \\ a &= 9 \end{aligned}$$

Cevap: B

$$5. \quad \begin{aligned} 3^{x-3} + 3^{y-5} + 3^{z-2} &= 1 \quad \left(\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1 \right) \\ \Rightarrow x-3 &= -1, \quad y-5 = -1, \quad 3-z = -1 \text{ olmalı} \\ x &= 2 \quad y = 4 \quad z = 4 \\ \text{O halde } x \cdot y \cdot z &= 2 \cdot 4 \cdot 4 = 32 \text{ olur.} \end{aligned}$$

Cevap: E

$$6. \quad \begin{aligned} \bullet \quad 3^a = 5^b &\Rightarrow 3^{\frac{a}{b}} = 5^{\frac{b}{a}} \Rightarrow 5^{\frac{b}{a}} = 3 \\ \bullet \quad 3^a = 5^b &\Rightarrow 3^{\frac{a}{b}} = 5^{\frac{b}{b}} \Rightarrow 3^{\frac{a}{b}} = 5 \\ &\Rightarrow 9^{\frac{a}{b}} = 25 \\ \Rightarrow 9^{\frac{a}{b}} + 5^{\frac{b}{a}} &= 25 + 3 = 28 \text{ olur.} \end{aligned}$$

Cevap: D

$$7. \quad \begin{aligned} 27^{4-|a-2|} &= (0,3)^3 \\ 3^{3(4-|a-2|)} &= \left(\frac{3}{9}\right)^3 \\ 3^{12-3|a-2|} &= \left(\frac{1}{3}\right)^3 \\ 3^{12-3|a-2|} &= 3^{-3} \\ 12-3|a-2| &= -3 \\ 15 &= 3|a-2| \\ |a-2| &= 5 \\ \begin{array}{l} \swarrow \quad \searrow \\ a-2=5 \quad a-2=-5 \\ a=7 \quad a=-3 \end{array} \\ \Rightarrow a \text{ değerleri toplamı} &= 7-3=4 \text{ olur.} \end{aligned}$$

Cevap: D

$$8. \quad \begin{aligned} 120^x = c &\Rightarrow (2^x)^3 \cdot 3^x \cdot 5^x = c \\ a^3 \cdot 3^x \cdot \frac{1}{b} &= c \\ 3^x &= \frac{b \cdot c}{a^3} \end{aligned}$$

Cevap: D

$$\begin{aligned}
 9. \quad & 3^a = 15^{a+b-1} \\
 & 3^a = 15^a \cdot 15^{b-1} \\
 & \frac{3^a}{15^a} = 15^{b-1} \\
 & \frac{15^a}{3^a} = 15^{1-b} \\
 \Rightarrow & 15^{1-b} = 5^a
 \end{aligned}$$

Cevap: A

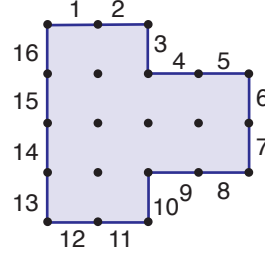
$$\begin{aligned}
 10. \quad a = 5 & \Rightarrow 5 \cdot 2^5 + 1 = 161 \\
 a = 6 & \Rightarrow 6 \cdot 2^6 + 1 = 387 \\
 a = 7 & \Rightarrow 7 \cdot 2^7 + 1 = \underline{+ 897} \\
 & 1443 \text{ olur.}
 \end{aligned}$$

Cevap: B

$$\begin{aligned}
 11. \quad & 1, 2, 3, \dots, 75 \rightarrow \text{içindeki 2 ve 3'ün kuvvetleri 2, 4, 8,} \\
 & 16, 32, 64, 3, 9, 27 \text{ olmak üzere 9 tane sayı atılırsa} \\
 & 1, 5, 6, \dots, 75 \rightarrow 66 \text{ sayı kalır.} \\
 & \text{O halde 75 üzerine 9 sayı daha ekleriz.} \\
 & 75 + 9 = 84 \quad (66 + 9 = 75) \\
 & \text{fakat 81 sayısı da 3'ün katı ona atınca 1 sayı daha eklemeliyiz.} \\
 & 84 + 1 = 85 \text{ olur.}
 \end{aligned}$$

Cevap: D

12.

16 tane 32 cm var o halde çevre $16 \cdot 32 = 2^4 \cdot 2^5 = 2^9$ cm olur.

Cevap: D

13.

$$\begin{aligned}
 32^{3a} &= 64^{5b} \\
 (2^5)^{3a} &= (2^6)^{5b} \\
 2^{15a} &= 2^{30b} \\
 \Rightarrow 15a &= 30b \\
 a = 2b &\Rightarrow a = 2 \text{ ve } b = 1 \\
 \text{için } a + b &\text{ en az } 2 + 1 = 3 \text{ olur.}
 \end{aligned}$$

Cevap: B

$$1. \frac{35^x + 35^x}{7^x + 7^x} = 125$$

$$\frac{2 \cdot 35^x}{2 \cdot 7^x} = 125 \Rightarrow \left(\frac{35}{7}\right)^x = 125$$

$$5^x = 5^3 \Rightarrow x = 3$$

Cevap: A

$$2. \frac{(0,25)^{1-x} + 2^{x+1}}{(0,5)^{1-x} + 2^x} = \frac{\left(\frac{1}{4}\right)^{1-x} + 2^{x+1}}{\left(\frac{1}{2}\right)^{1-x} + 2^x}$$

$$= \frac{(2^{-2})^{1-x} + 2^{x+1}}{(2^{-1})^{1-x} + 2^x} = \frac{2^{-2+2x} + 2^{x+1}}{2^{-1+x} + 2^x} = \frac{(2^x)^2 \cdot 2^{-2} + 2^x \cdot 2^1}{2^x \cdot 2^{-1} + 2^x}$$

$$= \frac{(6)^2 \cdot \frac{1}{4} + 6 \cdot 2}{6 \cdot \frac{1}{2} + 6} = \frac{\frac{36}{4} + 12}{3 + 6} = \frac{9 + 12}{9} = \frac{21}{9}$$

$$= \frac{7}{3}$$

Cevap: E

$$3. \frac{7}{a^b - 1} + \frac{7}{a^{-b} - 1}$$

$$\frac{7}{a^b - 1} + \frac{7}{\frac{1}{a^b} - 1} = \frac{7}{a^b - 1} + \frac{7}{\frac{1 - a^b}{a^b}} = \frac{7}{a^b - 1} + \frac{7 \cdot a^b}{1 - a^b}$$

$$= \frac{7}{a^b - 1} - \frac{7a^b}{a^b - 1} = \frac{7 - 7a^b}{a^b - 1} = \frac{-7(a^b - 1)}{a^b - 1} = -7$$

Cevap: B

$$4. 17^{a-5} = 7^{b-4}$$

$$\Rightarrow a - 5 = 0 \text{ ve } b - 4 = 0$$

$$a = 5 \quad b = 4$$

O halde $a \cdot b = 5 \cdot 4 = 20$ olur.

Cevap: E

$$5. 0,013 = A \cdot 10^{-4}$$

$$0,0024 = B \cdot 10^{-5}$$

$$\Rightarrow 13 \cdot 10^{-3} = A \cdot 10^{-4}$$

$$130 \cdot 10^{-4} = A \cdot 10^{-4} \Rightarrow A = 130$$

$$\Rightarrow 24 \cdot 10^{-4} = B \cdot 10^{-5}$$

$$240 \cdot 10^{-5} = B \cdot 10^{-5} \Rightarrow B = 240$$

O halde $A + B = 130 + 240 = 370$ olur.

Cevap: D

$$6. \bullet 21^x = a$$

$$7^x \cdot 3^x = a \quad (7^x = b)$$

$$b \cdot 3^x = a \Rightarrow 3^x = \frac{a}{b}$$

$$\Rightarrow 3^{x-1} = 3^x \cdot \frac{1}{3} = \frac{a}{b} \cdot \frac{1}{3} = \frac{a}{3b} \text{ olur.}$$

Cevap: D

$$7. 7^x \cdot 3^{x+2} = 7^x \cdot 3^x \cdot 3^2$$

$$= (7 \cdot 3)^x \cdot 9$$

$$= 21^x \cdot 9 \quad (21^x = 9)$$

$$= 9 \cdot 9$$

$$= 81 \text{ olur.}$$

Cevap: B

$$8. \underbrace{2^{10} + 2^{10} + \dots + 2^{10}}_{32 \text{ tane}} = 32 \cdot 2^{10}$$

$$= 2^5 \cdot 2^{10}$$

$$= 2^{15}$$

Cevap: D

$$9. 600^x = 8^x \cdot 75^x$$

$$= (2^x)^3 \cdot 25^x \cdot 3^x$$

$$= (2^x)^3 \cdot (5^x)^2 \cdot 3^x$$

$$= a^3 \cdot b \cdot c^2$$

Cevap: B

10. • Güneşte Dünya
 $10^{5,5}$ 10^4
 $10^{6,5}$?

 $10^{6,5+4} = 10^{5,5} \cdot ?$
 $10^5 \text{ kg} = ?$

• Dünyada Ayda
 10^5 10^3
 10^{-5} ?

 $10^5 \cdot ? = 10^{-5+3}$
 $10^5 \cdot ? = 10^{-2}$
 $? = 10^{-7} \text{ kg olur.}$

11. $4^m \cdot 10^m \cdot 25^m = 10000$
 $(4 \cdot 10 \cdot 25)^m = 10^4$
 $(1000)^m = 10^4$
 $(10^3)^m = 10^4$
 $3m = 4$
 $m = \frac{4}{3} \text{ olur.}$

12. • $n_x^{x^2} = \underbrace{x \cdot x \cdot x \dots x}_{x^2 \text{ tane}} = x^{x^2}$

• $m_x^x = \underbrace{x^x + x^x + \dots + x^x}_x = x \cdot x^x = x^{x+1}$

• $\frac{n_x^{x^2}}{m_x^x} = \frac{x^{x^2}}{x^{x+1}} = x^{x^2 - x - 1} = x^{131}$

$$\Rightarrow x^2 - x - 1 = 131$$

$$x^2 - x - 132 = 0$$

$$(x - 12)(x + 11) = 0$$

$$\Rightarrow x - 12 = 0 \text{ ve } x = 12 \text{ olur.}$$

Cevap: D

Cevap: C

TASARI EĞİTİM YAYINLARI

13. $\frac{25 \cdot 10^a}{4 \cdot 10^b} = 20^{-4}$

$$\frac{25}{4} \cdot 10^{a-b} = 20^{-4}$$

$$10^{a-b} = \frac{4 \cdot 20^{-4}}{25}$$

$$10^{a-b} = \frac{2^2 \cdot 2^{-4} \cdot 10^{-4}}{5^2}$$

$$10^{a-b} = 2^{-2} \cdot 10^{-4} \cdot 5^{-2}$$

$$10^{a-b} = 10^{-2} \cdot 10^{-4}$$

$$10^{a-b} = 10^{-6} \Rightarrow a - b = -6 \text{ olur.}$$

Cevap: C

Cevap: A

$$1. \quad a = 4^{13} = (2^2)^{13} = 2^{26}$$

$$b = 2^{(5^2)} = 2^{25}$$

$$c = 16^6 = (2^4)^6 = 2^{24}$$

$$\Rightarrow c < b < a$$

Cevap: C

$$2. \quad \bullet \quad 2^x = 22 \quad \Rightarrow \quad 2^4 < 2^x = 22 < 2^5$$

$$4 < x < 5$$

$$\bullet \quad 3^y = 52 \quad \Rightarrow \quad 3^3 < 3^y = 52 < 3^4$$

$$3 < y < 4$$

$$\bullet \quad 5^z = 102 \quad \Rightarrow \quad 5^2 < 5^z = 102 < 5^3$$

$$2 < z < 3$$

$$\Rightarrow x > y > z$$

Cevap: C

$$3. \quad a = 5^{68} = (5^4)^{17} = 625^{17}$$

$$b = 7^{34} = (7^2)^{17} = 49^{17}$$

$$c = 2^{85} = (2^5)^{17} = 32^{17}$$

$$\Rightarrow a > b > c$$

Cevap: B

$$4. \quad a^{2n-3} > a^{\frac{n+1}{2}} \quad (a > 1)$$

$$\Rightarrow 2n - 3 > \frac{n+1}{2}$$

$$4n - 6 > n + 1$$

$$3n > 7$$

$$\hookrightarrow \textcircled{3}, 4, 5, \dots$$

Cevap: E

$$5. \quad \left(\frac{3}{5}\right)^{x+8} \leq \left(\frac{27-2}{9}\right)^{2-2x}$$

$$\left(\frac{3}{5}\right)^{x+8} \leq \left(\frac{25}{9}\right)^{2-2x}$$

$$\left(\frac{5}{3}\right)^{-x-8} \leq \left(\frac{5}{3}\right)^{4-4x} \quad \left(\frac{5}{3} > 1\right)$$

$$\Rightarrow -x - 8 \leq 4 - 4x$$

$$3x \leq 12$$

$$x \leq 4$$

$$\hookrightarrow 0 + 1 + 2 + 3 + 4 = 10 \text{ olur.}$$

Cevap: D

$$6. \quad \bullet \quad 11^{4-x} \leq 1 \quad \Rightarrow \quad 11^{4-x} \leq 11^0$$

$$4 - x \leq 0$$

$$4 \leq x$$

$$\bullet \quad 1 < 13^{9-x} \quad \Rightarrow \quad 13^0 < 13^{9-x}$$

$$0 < 9 - x$$

$$x < 9$$

$$\Rightarrow 4 \leq x < 9$$

↓

$$4, 5, 6, 7, 8 \rightarrow 5 \text{ değeri var.}$$

Cevap: E

$$7. \quad \begin{array}{ccccccc} & a & & 2^a & & b & & 2^b \\ & | & & | & & | & & | \\ \leftarrow & D & & C & & B & & A \end{array}$$

$$\bullet \quad |BD| = 3 \quad \Rightarrow \quad b - a = 3$$

$$\bullet \quad |AC| = 28 \quad \Rightarrow \quad 2^b - 2^a = 28$$

$b = 5$ ve $a = 2$ için denklemler sağlanır.

$$\Rightarrow 2^{a \cdot b} = 2^{2 \cdot 5} = 2^{10}$$

Cevap: C

