



$$8. \quad \underbrace{\left(1 - \frac{1}{4}\right)\left(1 + \frac{1}{4}\right)}_{\downarrow} \left(1 + \frac{1}{16}\right) = \frac{2^x - 1}{2^x}$$

$$\left(1 - \frac{1}{16}\right) \cdot \left(1 + \frac{1}{16}\right) = \frac{2^x}{2^x} - \frac{1}{2^2}$$

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

$$\frac{1}{16^2} = \frac{1}{2^x} \Rightarrow 2^x = 16^2$$

$$2^x = 2^8$$

$$x = 8 \text{ olur.}$$

Cevap: E

$$9. \quad 7^{x+y-8} = 2^{2x-3y-4}$$

$$\Rightarrow x + y - 8 = 0$$

$$+ 2x - 3y - 4 = 0$$

$$3x - 2y - 12 = 0$$

$$3x - 2y = 12$$

Cevap: E

$$10. \quad \left(\frac{1}{3}\right)^x = \frac{4}{7} \Rightarrow 3^x = \frac{7}{4} \text{ ve } 9^x = \frac{49}{16}$$

$$\cdot 9^x \cdot 2^y = 49$$

$$\frac{49}{16} \cdot 2^y = 49 \Rightarrow 2^y = 16$$

$$2^y = 2^4$$

$$y = 4 \text{ olur.}$$

Cevap: E

$$11. \quad 5^{x+1} = 3^x \Rightarrow 5^x \cdot 5 = 3^x \Rightarrow \frac{3^x}{5^x} = 5$$

$$\left(\frac{3}{5}\right)^x = 5$$

$$\left(\frac{9}{25}\right)^x = 25 \text{ olur.}$$

Cevap: D

$$12. \quad \begin{aligned} \cdot 2^a = 9 &\Rightarrow 2^a = 3^2 \\ 3^b = 4 &\Rightarrow 2^2 = 3^b \end{aligned} \Rightarrow \frac{a}{2} = \frac{2}{b}$$

$$a \cdot b = 4 \text{ olur.}$$

$$\cdot (a^a)^b \cdot (b^b)^a = a^{ab} \cdot b^{ab} = (ab)^{ab} = 4^4 = 2^8$$

Cevap: B

$$13. \quad 5^x = 45 \Rightarrow 5^x = 5 \cdot 3^2 \Rightarrow 5^{x-1} = 3^2$$

$$3^y = 75 \Rightarrow 3^y = 5^2 \cdot 3 \Rightarrow 5^2 = 3^{y-1}$$

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

$$(x-1)(y-1) = 4$$

$$xy - x - y + 1 = 4$$

$$xy - x - y = 3$$

Cevap: C

$$14. \quad (27 - x)^y = 625 = 5^4$$

$$(27 - x)^y = 25^2$$

$y = 2$  seçilirse  $27 - x = 25$  veya  $27 - x = -25$  olabilir.

$$x\text{'in büyük değeri } 27 - x = -25$$

$$x = 52$$

O halde  $x + y = 52 + 2 = 54$  olur.

Cevap: A