1. $\dfrac{(a-b)\overset{8}{\overbrace{(a+b)}}}{\sqrt{a}-\sqrt{b}} = 48$

$\dfrac{a-b}{\sqrt{a}-\sqrt{b}} = 6$

$\dfrac{(\sqrt{a}-\sqrt{b}).(\sqrt{a}+\sqrt{b})}{(\sqrt{a}-\sqrt{b})} = 6$

$(\sqrt{a}+\sqrt{b})^2 = (6)^2$

$\underbrace{a+b}_{8} + 2\sqrt{a.b} = 36$

$2\sqrt{a.b} = 28$

$(\sqrt{a.b})^2 = (14)^2$

$a.b = 196$ bulunur.

Cevap: E

2. $(\sqrt{a}-\sqrt{b})^2 = (4\sqrt{3})^2$

i) $a+b-2\sqrt{a.b} = 48$

ii) $a+b+\sqrt{4a.b} = 24$

$a+b+2\sqrt{a.b} = 24$

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$a+b-2\sqrt{a.b} = 48$

$a+b+2\sqrt{a.b} = 24$

$2(a+b) = 72$

$a+b = 36$ bulunur.

Cevap: C

3. $\dfrac{\sqrt{a.b^2.b}}{\sqrt{b}} + \dfrac{\sqrt{a^2.b^2}}{\sqrt{a}} = \sqrt{b}$

$\dfrac{b\sqrt{a}.\cancel{\sqrt{b}}}{\cancel{\sqrt{b}}} + \dfrac{a.b}{\sqrt{a}} = \sqrt{b}$

$\dfrac{b\sqrt{a}}{1} + \dfrac{a.b}{\sqrt{a}} = \sqrt{b}$

$\dfrac{b.a+a.b}{\sqrt{a}} = \sqrt{b}$

$(2(a.b))^2 = (\sqrt{a.b})^2$

$4.a^2.b^2 = a.b$

$4.a.b = 1$

$a.b = \dfrac{1}{4}$ bulunur.

Cevap: A

4. $(\sqrt{9^{x-2}})^2 = \left(\dfrac{5}{9}\right)^2$

$9^{x-2} = \dfrac{25}{81}$

$9^x.9^{-2} = \dfrac{25}{81}$

$\dfrac{9^x}{\cancel{9^2 = 81}} = \dfrac{25}{\cancel{81}} \Rightarrow (3^x)^2 = (5)^2$

$3^x = 5$ olur.

$27^x = (3^x)^3 = (5)^3 = 125$ bulunur.

Cevap: E

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5. $3^x = 9^y$

$3^{x+1} + 9^{y+1} = 972$

$3^x.3^1 + 9^y.9^1 = 972$

$9^y.3 + 9^y.9 = 972$

$12.9^y = 972$

$9^y = 81$

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

$3^x = 9^2$

$3^x = 3^4$

$x = 4$ olur.

O halde $x.y = 4.2 = 8$ bulunur.

Cevap: D

6. $5^x.5 + \frac{5^x}{25} = 630$

$\frac{126.5^x}{25} = 630$

$126.5^x = 630.25$

$5^x = \frac{\overset{5}{\cancel{630}}.25}{\cancel{126}}$

$5^x = 125 = 5^3$

$x = 3$ bulunur.

Cevap: C

7. $a - b = (\sqrt{a} - \sqrt{b})(\sqrt{a} + \sqrt{b})$ $\quad a = \sqrt{a}.\sqrt{a}$

$b = \sqrt{b}.\sqrt{b}$

$\frac{1}{\cancel{(\sqrt{a}+\sqrt{b})}} \cdot \frac{(\sqrt{a}-\sqrt{b}).\cancel{(\sqrt{a}+\sqrt{b})}}{\sqrt{a}.\sqrt{a}.\sqrt{b} - \sqrt{b}.\sqrt{b}.\sqrt{a}} = \frac{1}{5}$

$\frac{\cancel{(\sqrt{a}-\sqrt{b})}}{\sqrt{a}.\sqrt{b}\cancel{(\sqrt{a}-\sqrt{b})}} = \frac{1}{5}$

$(\sqrt{a.b})^2 = (5)^2$

$a.b = 25$ bulunur.

Cevap: C

8. $a^2 - b^2 = (a - b)(a + b)$

$\frac{(3^x)^2 - (3^{-x})^2}{3^x + 3^{-x}} = -80.3^x$

$\frac{(3^x - 3^{-x})\cancel{(3^x + 3^{-x})}}{\cancel{(3^x + 3^{-x})}} = -80.3^x$

$3^x - 3^{-x} = -80.3^x$

$81.3^x = 3^{-x}$

$3^4.3^x = 3^{-x}$

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

$2x = -4$

$x = -2$ bulunur.

Cevap: B

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9. $7^x.7 = 35 \Rightarrow 7^x = 5$

$$\frac{(7^x)^2+15}{7^x+5} = \frac{5^2+15}{5+5} = \frac{25+15}{10} = \frac{40}{10}$$

$= 4$ bulunur.

Cevap: A

10. $\frac{a-\sqrt{a}}{(a-1)^2} \cdot \frac{a+\sqrt{a}}{a} = 5$

$$\frac{(a^2-a)}{(a-1)^2.a} = 5$$

$$\frac{a.(a-1)}{(a-1).(a-1).a} = 5$$

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

$a - 1 = \frac{1}{5} \Rightarrow a = \frac{1}{5} + 1$

$a = \frac{6}{5}$ bulunur.

Cevap: C

11. $\frac{\sqrt{x}}{\underset{(6)}{\sqrt{3}}} + \frac{\sqrt{x}}{\underset{(3)}{2\sqrt{3}}} + \frac{\sqrt{x}}{\underset{(2)}{3\sqrt{3}}} = \frac{11}{3}$

$$\frac{6\sqrt{x}+3\sqrt{x}+2\sqrt{x}}{6\sqrt{3}} = \frac{11}{3}$$

$$\frac{11\sqrt{x}}{6\sqrt{3}} = \frac{11}{3}$$

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

$(\sqrt{x})^2 = (2\sqrt{3})^2$

$x = 12$ bulunur.

Cevap: D

12. $\frac{9^b}{3^a} = \frac{1}{3} \Rightarrow 3^a = 3.9^b$

$3.9^b - 9^b = \frac{2}{81}$

$2.9^b = \frac{2}{81} \Rightarrow 9^b = 9^{-2}$

$b = -2$ olur.

$3^a = 3.9^{-2}$

$3^a = 3.3^{-4}$

$3^a = 3^{-3}$

$a = -3$

O halde $a.b = (-3).(-2) = 6$ bulunur.

Cevap: E

TASARI EĞİTİM YAYINLARI