

$$1. \quad \left(\sqrt{a} - \frac{1}{\sqrt{a}}\right)^2 = (-1)^2$$

$$a + \frac{1}{a} - 2 = 1 \quad \Rightarrow \quad a + \frac{1}{a} = 3$$

$$* \quad \left(a + \frac{1}{a}\right)^2 = (3)^2$$

$$a^2 + \frac{1}{a^2} + 2 = 9 \quad \Rightarrow \quad a^2 + \frac{1}{a^2} = 7 \text{ olur.}$$

O halde

$$\left(a - \frac{1}{a}\right)^2 = (x)^2 \text{ olsun}$$

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

$$7 - 2 = x^2 \quad \Rightarrow \quad x^2 = 5$$

$$x = \sqrt{5} \text{ bulunur.}$$

Cevap: C

$$2. \quad = \frac{x(x-1)(x+1)}{(x-1)} \cdot \frac{y(xy-2)}{(xy-1-1)(xy-1+1)}$$

$$= x \cdot (x+1) \cdot \frac{y}{xy}$$

$$= x+1 \text{ bulunur.}$$

Cevap: B

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

$$\frac{a-4}{\sqrt{a}+2} = \frac{a}{\sqrt{a}-2}$$

$$\frac{(\sqrt{a}-2)(\sqrt{a}+2)}{\sqrt{a}+2} = \frac{a}{\sqrt{a}-2} \quad \Rightarrow \quad (\sqrt{a}-2)^2 = a$$

$$a + 4 - 4\sqrt{a} = a$$

$$4 = 4\sqrt{a}$$

$$(1)^2 = (\sqrt{a})^2$$

$$1 = a \text{ bulunur.}$$

Cevap: C

$$4. \quad \left. \begin{array}{l} \text{Büyük kartonun çevresi} \quad 4x \\ \text{Küçük kartonun çevresi} \quad 4y \end{array} \right\} \begin{array}{l} 4x - 4y = 32 \\ x - y = 8 \end{array}$$

$$\left. \begin{array}{l} \text{Büyük kartonun alanı} = x^2 \\ \text{Küçük kartonun alanı} = y^2 \end{array} \right\} x^2 - y^2 = 120$$

$$\frac{(x-y)(x+y)}{8} = 120$$

$$x+y = 15$$

$$\text{Çevre uzunlukları toplamı } 4(x+y) = 4 \cdot 15 = 60$$

Cevap: E

$$5. \quad x + y = xy \text{ olduğuna göre,}$$

$$\frac{x+2}{xy^2} + \frac{y+2}{x^2y} = \frac{x \cdot (x+2) + y \cdot (y+2)}{x^2 \cdot y^2}$$

$$= \frac{x^2 + 2x + y^2 + 2y}{(xy)^2}$$

$$= \frac{x^2 + y^2 + 2(x+y)}{(xy)^2} = \frac{x^2 + y^2 + 2xy}{(x+y)^2}$$

$$= \frac{(x+y)^2}{(x+y)^2} = 1 \text{ bulunur.}$$

Cevap: A

$$6. \quad \left(\frac{x^2-16}{x^2+8x+16}\right) \cdot x+4$$

$$= \frac{(x-4)(x+4)}{(x+4)(x+4)} \cdot x+4$$

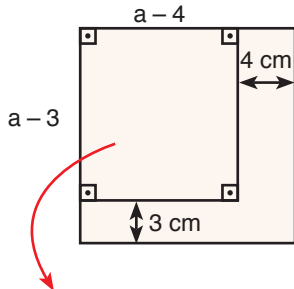
$$= \frac{x-4}{x+4} \cdot x+4 = \frac{x^2-4x}{x+4} + 4$$

$$= \frac{x^2 - 4x + 4x + 16}{x+4}$$

$$= \frac{x^2+16}{x+4} \text{ bulunur.}$$

Cevap: E

7.



Alanı = $(a - 4) \cdot (a - 3) = a^2 - 7a + 12$ bulunur.

Cevap: C

10.

$$\left(\frac{1}{x^3} + \frac{1}{x^2}\right) \cdot (x^2 - x + 1) = 28$$

$$\frac{x^2}{x^3} - \frac{x}{x^3} + \frac{1}{x^3} + \frac{x^2}{x^2} - \frac{x}{x^2} + \frac{1}{x^2} = 28$$

$$\frac{1}{x} - \frac{1}{x^2} + \frac{1}{x^3} + 1 - \frac{1}{x} + \frac{1}{x^2} = 28$$

$$\frac{1}{x^3} + 1 = 28 \Rightarrow \frac{1}{x^3} = 28 - 1 = 27$$

$$x^3 = \frac{1}{27}$$

$$x = \frac{1}{3} \text{ bulunur.}$$

Cevap: A

8.

$$\begin{array}{r} y + x^2 = z \\ + \quad x - z^2 = y \\ \hline \end{array}$$

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

$$x^2 - z^2 = z - x$$

$$(\cancel{x - z})(x + z) = -(\cancel{x - z})$$

$$x + z = -1 \text{ bulunur.}$$

Cevap: C

9.

$$\frac{6a^2 + 3ab + 6a^2b + 3a}{2ab + b + 2a + 1} = \frac{3a(\cancel{2a + b + 2ab + 1})}{(\cancel{2ab + b + 2a + 1})}$$

$$= 3a \text{ bulunur.}$$

Cevap: D

$$11. ((x+3)\sqrt{x-3})^2 = (\sqrt{3x+9})^2$$

$$(x+3)^2 \cdot (x-3) = (3x+9)$$

$$(\cancel{x+3}) \cdot (x+3) \cdot (x-3) = 3 \cdot (\cancel{x+3})$$

$$x^2 - 9 = 3$$

$$x^2 = 12 \Rightarrow x = \sqrt{12}$$

$$x = 2\sqrt{3} \text{ olur.}$$

Cevap: B

12. $\frac{x}{a} \cdot \frac{b}{y} = 3 \Rightarrow \frac{b}{y} = \frac{3a}{x}$

$$\frac{a^2}{x^2} + \frac{b^2}{y^2} = 90$$

$$\frac{a^2}{x^2} + \left(\frac{b}{y}\right)^2 = 90$$

$$\frac{a^2}{x^2} + \left(\frac{3a}{x}\right)^2 = 90$$

$$\frac{a^2}{x^2} + \frac{9a^2}{x^2} = 90 \Rightarrow \frac{10a^2}{x^2} = 90$$

$$\sqrt{\frac{a^2}{x^2}} = \sqrt{9}$$

$$\frac{a}{x} = 3 \text{ olur.}$$

$$x = \frac{a}{3} \text{ bulunur.}$$

Cevap: B

TASARI EĞİTİM YAYINLARI

13. $\frac{1}{x^2} + \frac{4}{\frac{x}{(x)}} + \frac{4}{\frac{1}{(x^2)}} = 0$

$$\frac{1 + 4x + 4x^2}{x^2} = 0$$

$$\Rightarrow 4x^2 + 4x + 1 = 0$$

$$\begin{array}{cc} 2x & 1 \\ 2x & 1 \end{array}$$

$$\begin{array}{cc} 2x & 1 \\ 2x & 1 \end{array}$$

$$(2x + 1)^2 = 0 \Rightarrow 2x + 1 = 0$$

$$2x = -1$$

$$x = -\frac{1}{2} \text{ bulunur.}$$

Cevap: A