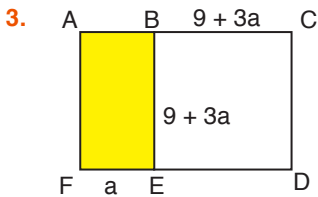


1. $m^2n = mn^2 + 330$
 $m^2n - mn^2 = 330$
 $m \cdot n(m - n) = 3 \cdot 11 \cdot 2 \cdot 5 \quad (m > n)$
 $\downarrow \quad \downarrow \quad \downarrow$
 $11 \quad 5 \quad 3 \cdot 2$
 $\Rightarrow n = 5$ olur.

Cevap: C

2. • $a \cdot c - b \cdot c = a^2 - b^2$
 $c(a - b) = (a - b)(a + b) \Rightarrow c = a + b$
 • $\frac{c(a + b)}{7} = \frac{7}{4} \quad (c = a + b)$
 $\frac{c \cdot c}{7} = \frac{7}{4} \Rightarrow c^2 = \frac{49}{4} \Rightarrow c = \frac{7}{2}$ olur.

Cevap: B

Sarı bölgenin alanı = $a \cdot (9 + 3a) = 9a + 3a^2$

I. $2a(3 + a) = 6a + 2a^2$

II. $a \cdot (9 + 3a) = 9a + 3a^2$

III. $3a(3 + a) = 9a + 3a^2$

II ve III sarı bölgenin alanını belirtir.

Cevap: D

4. $a^2 - (a^2 - a)^2 = (a - a^2 + a)(a + a^2 - a)$
 $= (2a - a^2) \cdot a^2$
 $= a(2 - a) \cdot a^2$
 $= a^3 \cdot (2 - a)$
 $\Rightarrow 2 - a^2$ çarpan olarak oluşturulamaz.

Cevap: E

5. $\frac{3a^2 - b^2}{9a^2 + a^b} = \frac{1}{9} \Rightarrow \frac{1}{3 \cdot 2a^2 + 2ab - a^2 + b^2} = \frac{1}{3^2}$
 $\Rightarrow 2a^2 + 2ab - a^2 + b^2 = 2$
 $a^2 + 2ab + b^2 = 2$
 $(a + b)^2 = 2$ olur.

Cevap: A

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

Cevap: A

$$7. \frac{1+4^8-2^4-8^4}{2^{12}-1} = \frac{1+2^{16}-2^4-2^{12}}{2^{12}-1}$$

$$= \frac{2^{12}(2^4-1)-(2^4-1)}{2^{12}-1} = \frac{(2^4-1)(2^{12}-1)}{2^{12}-1}$$

$$= 2^4 - 1 = 15$$

Cevap: B

$$8. \cdot 7^{x-y} = 49 \cdot 7^{y-x} \Rightarrow 7^{x-y} \cdot 7^{x-y} = 49$$

$$7^{2(x-y)} = 7^2$$

$$2(x-y) = 2 \text{ ve } x-y = 1 \text{ olur.}$$

$$\cdot x^2 - y^2 = 7 \quad \cdot x - y = 1$$

$$(x-y) \cdot (x+y) = 7 \quad + x + y = 7$$

$$\begin{array}{r} \downarrow \quad \downarrow \\ 1 \quad 7 \end{array} \quad \frac{\quad}{2x = 8}$$

$$x = 4 \text{ ve } y = 3 \text{ çıkar.}$$

Buna göre $x^3 + y^3 = 4^3 + 3^3 = 64 + 27 = 91$ olur.

Cevap: A

$$9. \frac{4^8 - 2^4 - 8^4 + 1}{(2^6 - 1)(2^6 + 1)} = \frac{2^{16} - 2^4 - 2^{12} + 1}{2^{12} - 1} = x + 2$$

$$\frac{2^{12}(2^4 - 1) - (2^4 - 1)}{2^{12} - 1} = x + 2$$

$$\frac{(2^4 - 1)(2^{12} - 1)}{2^{12} - 1} = x + 2$$

$$2^4 - 1 = x + 2$$

$$x + 2 = 15$$

$$x = 13$$

Cevap: C

$$10. \frac{m-n}{\sqrt{m}-\sqrt{n}} = \frac{m\sqrt{n}+n\sqrt{m}}{5}$$

$$\frac{(\sqrt{m}-\sqrt{n})(\sqrt{m}+\sqrt{n})}{\sqrt{m}-\sqrt{n}} = \frac{\sqrt{m} \cdot \sqrt{n}(\sqrt{m}+\sqrt{n})}{5}$$

$$5 = \sqrt{m} \cdot \sqrt{n}$$

$$\boxed{25 = m \cdot n}$$

Cevap: E

$$11. b - c = a\sqrt{b} - a\sqrt{c}$$

$$(\sqrt{b}-\sqrt{c})(\sqrt{b}+\sqrt{c}) = a(\sqrt{b}-\sqrt{c})$$

$$\sqrt{b} + \sqrt{c} = a$$

$$a - \sqrt{b} = \sqrt{c} \text{ olur.}$$

Cevap: D

$$12. \frac{m+\sqrt{m}}{m^2-m} - \frac{m}{m-\sqrt{m}} = -3$$

$$\frac{\sqrt{m}(\sqrt{m}+1)}{\sqrt{m}(\sqrt{m}-1)(\sqrt{m}+1)} - \frac{\sqrt{m}}{\sqrt{m}(\sqrt{m}-1)} = -3$$

$$\frac{1}{\sqrt{m}(\sqrt{m}-1)} - \frac{\sqrt{m}}{\sqrt{m}(\sqrt{m}-1)} = -3$$

$$\frac{1-m}{\sqrt{m}(\sqrt{m}-1)} = -3$$

$$\frac{(1-\sqrt{m})(1+\sqrt{m})}{\sqrt{m}(\sqrt{m}-1)} = -3$$

$$-1 - \sqrt{m} = -3\sqrt{m}$$

$$-1 = -2\sqrt{m}$$

$$\sqrt{m} = \frac{1}{2} \Rightarrow m = \frac{1}{4} \text{ olur.}$$

Cevap: B

13.

$$\begin{array}{r}
 x^2 - y = 13 \\
 + \quad x - y^2 = -3 \\
 \hline
 x^2 - y^2 + x - y = 10 \\
 (x - y)(x + y + 1) = 10 \quad (x + y = 4) \\
 (x - y)(5) = 10 \\
 x - y = 2
 \end{array}$$

Cevap: E

$$15. \cdot a = \frac{1}{b+3} \Rightarrow ab + 3a = 1$$

$$\cdot a = \frac{1}{b+3} \Rightarrow \frac{1}{a} = b + 3$$

$$\Rightarrow b + \underbrace{ab + 3a}_{1} - \frac{1}{a} + 4$$

$$= b + 1 - (b + 3) + 4$$

$$= b + 1 - b - 3 + 4$$

$$= 2 \text{ olur.}$$

Cevap: E

$$14. 2a - 3\sqrt{a} = 2b - 3\sqrt{b}$$

$$2a - 2b = 3\sqrt{a} - 3\sqrt{b}$$

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

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

$$\sqrt{a} + \sqrt{b} = \frac{3}{2} \quad \text{her iki tarafın karesi alınırsa,}$$

$$(\sqrt{a} + \sqrt{b})^2 = \left(\frac{3}{2}\right)^2$$

$$a + 2\sqrt{ab} + b = \frac{9}{4} \quad (a \cdot b = \frac{1}{4})$$

$$a + 2 \cdot \sqrt{\frac{1}{4}} + b = \frac{9}{4}$$

$$a + 2 \cdot \frac{1}{2} + b = \frac{9}{4} \Rightarrow a + b = \frac{9}{4} - 1 = \frac{5}{4} \text{ olur.}$$

Cevap: D