

29.11.2021
Evaluare sumativă

I

$$1. \ 8 + \sqrt{8 + \sqrt{8^2}} = 8 + \sqrt{8 + 8} \\ = 8 + \sqrt{16} \\ = 8 + \sqrt{4^2} \\ = 8 + 4 = 12 \quad \text{R.C.12}$$

$$2. \ \sqrt{900} - \sqrt{3^6} + \sqrt{(-2)^4} = \sqrt{30^2} - 27 + 4 \\ = 30 - 27 + 4 = 7 \quad \text{R.D.7}$$

$$3. \ 2^4 \cdot 49 = 2^{20} \cdot 7^2 \\ \text{R.C.28}$$

$$4. \ \sqrt{a+7} = 17 \quad |^{-2} \\ a + 7 = 289$$

$$a = 282 \quad \text{R: D.282}$$

$$5. \ x = \sqrt{0,41}$$

$$x = \sqrt{\frac{41}{100}}$$

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

R. C. $x \in \mathbb{Q}$

$$6. \ A = \left\{ \sqrt{\frac{225}{49}}, \sqrt{2\frac{1}{3}}, \sqrt{\frac{300}{3}}, \sqrt{\frac{186}{0,04}}, \sqrt{\frac{3 \cdot 10^2}{5^2}} \right\}$$

$$\sqrt{\frac{225}{49}} = \frac{15}{7}$$

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

$$\sqrt{300} = 10$$

$$\sqrt{\frac{196}{0,04}} = \sqrt{4900} = 70$$

$$\sqrt{\frac{4 \cdot 96}{100}} = \frac{4 \cdot 4}{10} = 1,6$$

$$\sqrt{\frac{3 \cdot 2^2}{5^2}} = \frac{3 \cdot 2}{5} = 1,2$$

R.C. trei nr. nat.

7

II

$$a) \ 2\sqrt{81} - 3\sqrt{64} + 4\sqrt{49} - 5\sqrt{36} = \\ = 2 \cdot 9 - 3 \cdot 8 + 4 \cdot 7 - 5 \cdot 6 \\ = 18 - 24 + 28 - 30 \\ = -6 + 28 - 30 \\ = 22 - 30 \\ = -8$$

$$b) \ (\sqrt{36} - \sqrt{64}) \cdot (\sqrt{100} - \sqrt{144}) = \\ = (6 - 8) \cdot (10 - 12) \\ = (-2) \cdot (-2) \\ = 4$$

$$c) \ \sqrt{\frac{1225}{441}} \cdot (\sqrt{225})^{-1} = -2,5$$

$$= \frac{35}{21} \cdot (-3) = -\frac{35}{7} = -5$$

$$= -\frac{875}{21} = -\frac{125}{3}$$

$$= -41,6666666667$$

$$= -41, (6)$$

2

a)

$$a = \sqrt{25^2 - 20^2} - \sqrt{5^2 + 12^2}$$

$$a = \sqrt{225 - 400} - \sqrt{169}$$

$$a = 20$$

$$b = \sqrt{100} \cdot \left(\sqrt{\frac{49}{25}} - \sqrt{0,01} - \sqrt{\frac{9}{16}} \right)$$

$$b = 10 \cdot \left(\frac{7}{5} - \frac{1}{10} - \frac{\sqrt{25}}{4} \right)$$

$$b = 10 \cdot \left(\frac{14}{10} - \frac{1}{10} - \frac{5}{4} \right)$$

$$b = 10 \cdot \left(\frac{28 - 1 - 25}{20} \right)$$

$$b = 10 \cdot \frac{2}{20} = 1$$

$$b = 1$$

b)

$$\sqrt{a \cdot b} = \sqrt{12} \cdot \frac{1}{2} = \sqrt{6}$$

$$\sqrt{a \cdot b} = \sqrt{6}$$

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

g. e. d.

7.

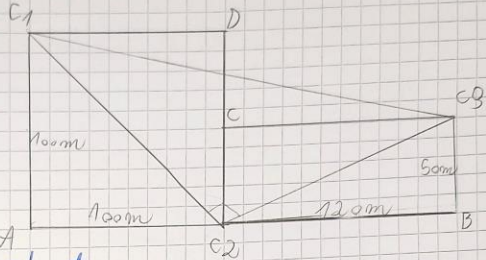
$$\frac{a^2 b^2 c^2 d^2 e^2}{\sqrt{a b c d e}} = x^2$$

$$\sqrt{a b c d e} = x$$

R.B.3. ipse

8. R.D. (d)

3.



a) $\triangle AC_1C_2$ - pătrat
 $\triangle C_2C_3C_1$ - dreptunghi
 $\triangle AC_1C_2$ - dreptunghi - $\angle A = 90^\circ \Rightarrow C_1C_2$ - ipse.

$$C_1C_2^2 = C_1A^2 + C_2A^2$$

$$C_1C_2^2 = (100\text{m})^2 + (100\text{m})^2$$

$$C_1C_2 = \sqrt{100^2 + 100^2}$$

$$C_1C_2 = 100 + 100$$

$$C_1C_2 = 200\text{m}$$

$$C_2C_3 = \sqrt{120^2 + 50^2}$$

$$C_2C_3 = 120 + 50$$

$$C_2C_3 = 170\text{m}$$

$$C_1C_3 = C_2C_3 = 200\text{m} + 170\text{m}$$

$$= 370\text{m}$$

$$b) C_1C_3 = \sqrt{C_1C_2^2} + \sqrt{C_2C_3^2}$$

$$C_1C_3 = \sqrt{200^2} + \sqrt{170^2}$$

$$C_1C_3 = 200 + 170$$

$$C_1C_3 = 370\text{m}$$

$$C_1C_2 = C_3 = 370\text{m}$$