

Varianta 73

III.

13. a) c.m.m.d.c. $(279; 372) = 39$.

b) $a = b \cdot 4 + 2, a + b = 77 \Rightarrow a = 62, b = 15$.

14. a) $N = (\sqrt{2} + \sqrt{3} + 1)^2 - 2(\sqrt{6} + \sqrt{3} + \sqrt{2}) = 6$

b) $3x^2 - x + 9x - 3 = x - 3x^2 + 2 - 6x \Rightarrow 6x^2 + 13x - 5 = 0$, deci $x_1 = \frac{1}{3}, x_2 = \frac{-5}{2}$.

c) $2(x+1) - \sqrt{5}(x+1) < 0 \Rightarrow (x+1)(2 - \sqrt{5}) < 0 \Rightarrow x+1 > 0 \Rightarrow x \in (-1; +\infty)$.

15. b) $BC = CD = 2r; \Delta ABCdr \Rightarrow BC^2 = AB \cdot pr_{AB}BC \Rightarrow 4r^2 = 8(4-r)$ (teorema catetei) $\Rightarrow r = 2$.

c) $V = \frac{56\sqrt{3}\pi}{3} \text{ cm}^3$.

d) $\Delta TO'C$ este asemenea cu $\Delta ECB \Rightarrow \frac{O'T}{CE} = \frac{O'C}{CB} = \frac{TC}{EB} \Rightarrow \frac{O'T}{2\sqrt{3}} = \frac{2}{4} \Rightarrow O'T = \sqrt{3} \text{ cm}$.