

30) Riješi jednađbu: $4 \sin^2 x - 2\sqrt{3} \sin x + 2 \sin x - \sqrt{3} = 0$

$$4 \sin^2 x - 2\sqrt{3} \sin x + 2 \sin x - \sqrt{3} = 0$$

$$4 \sin^2 x + (-2\sqrt{3} + 2) \sin x - \sqrt{3} = 0$$

$$\sin x = t$$

$$4t^2 + (-2\sqrt{3} + 2) - \sqrt{3} = 0$$

$$t_{1,2} = \frac{-(-2\sqrt{3} + 2) \pm \sqrt{(-2\sqrt{3} + 2)^2 - 4 \cdot 4 \cdot (-\sqrt{3})}}{2 \cdot 4} = \frac{-(-2\sqrt{3} + 2) \pm \sqrt{(2 - 2\sqrt{3})^2 + 16\sqrt{3}}}{2 \cdot 4}$$

$$t_{1,2} = \frac{2\sqrt{3} - 2 \pm \sqrt{4 - 8\sqrt{3} + 2^2 \cdot 3 + 16\sqrt{3}}}{8} = \frac{2\sqrt{3} - 2 \pm \sqrt{4 + 8\sqrt{3} + (2\sqrt{3})^2}}{8}$$

$$t_{1,2} = \frac{2\sqrt{3} - 2 \pm \sqrt{2^2 + 2 \cdot 2 \cdot 2\sqrt{3} + (2\sqrt{3})^2}}{8}$$

$$t_{1,2} = \frac{2\sqrt{3} - 2 \pm \sqrt{(2 + 2\sqrt{3})^2}}{8} = \frac{2\sqrt{3} - 2 \pm (2 + 2\sqrt{3})}{8}$$

$$t_1 = \frac{2\sqrt{3} - 2 - (2 + 2\sqrt{3})}{8} = \frac{2\sqrt{3} - 2 - 2 - 2\sqrt{3}}{8}$$

$$t_1 = -\frac{4}{8}$$

$$t_1 = -\frac{1}{2}$$

$$t_2 = \frac{2\sqrt{3} - 2 + (2 + 2\sqrt{3})}{8} = \frac{2\sqrt{3} - 2 + 2 + 2\sqrt{3}}{8}$$

$$t_2 = \frac{4\sqrt{3}}{8}$$

$$t_2 = \frac{\sqrt{3}}{2}$$

$$\sin x = t$$

$$\sin x = -\frac{1}{2}$$

$$x_1 = \frac{7\pi}{6} + 2k\pi$$

$$x_2 = \frac{11\pi}{6} + 2k\pi$$

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

$$x_3 = \frac{\pi}{3} + 2k\pi$$

početnu jednađbu smo sveli
na elementarne jednađbe
koje smo već riješili pod br. 5) i br. 3)

$$x_4 = \frac{2\pi}{3} + 2k\pi$$



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