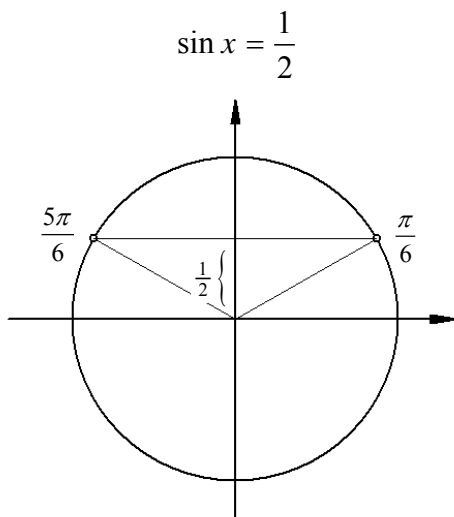


1.

1) Riješi jednađbu:  $\sin x = \frac{1}{2}$

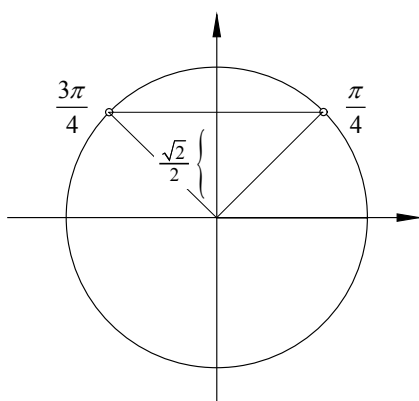


$$x_1 = \frac{\pi}{6} + 2k\pi$$

$$x_2 = \frac{5\pi}{6} + 2k\pi$$



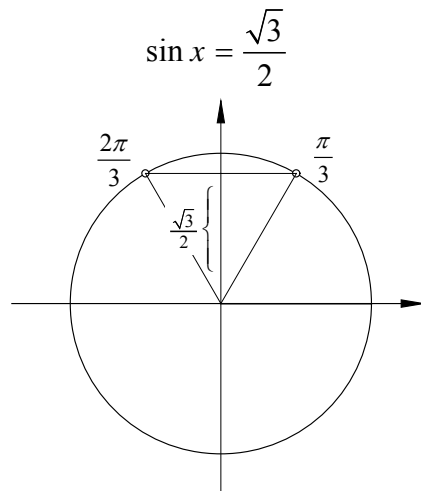
2) Riješi jednađbu:  $\sin x = \frac{\sqrt{2}}{2}$



$$x_1 = \frac{\pi}{4} + 2k\pi$$

$$x_2 = \frac{3\pi}{4} + 2k\pi$$

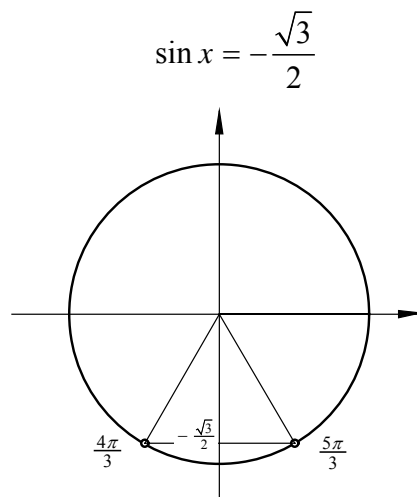
3) Riješi jednađbu:  $\sin x = \frac{\sqrt{3}}{2}$



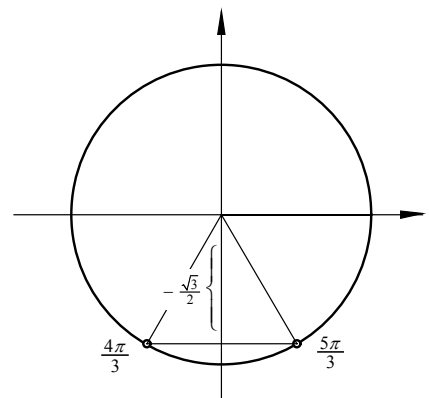
$$x_1 = \frac{\pi}{3} + 2k\pi$$

$$x_2 = \frac{2\pi}{3} + 2k\pi$$

4) Riješi jednađbu:  $\sin x = -\frac{\sqrt{3}}{2}$



ili

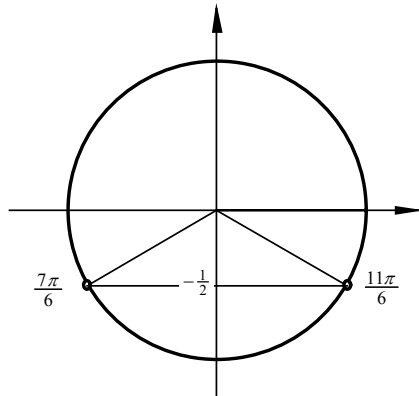


$$x_1 = \frac{4\pi}{3} + 2k\pi$$

$$x_2 = \frac{5\pi}{3} + 2k\pi$$

5) Riješi jednađbu:  $\sin x = -\frac{1}{2}$

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



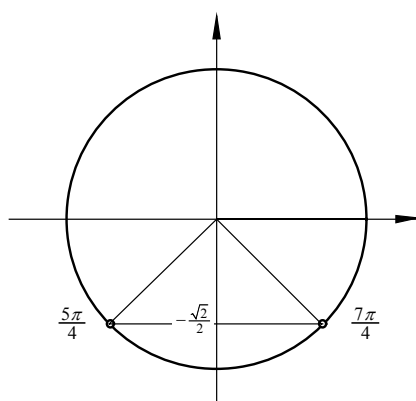
$$x_1 = \frac{7\pi}{6} + 2k\pi$$

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



6) Riješi jednađbu:  $\sin x = -\frac{\sqrt{2}}{2}$

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

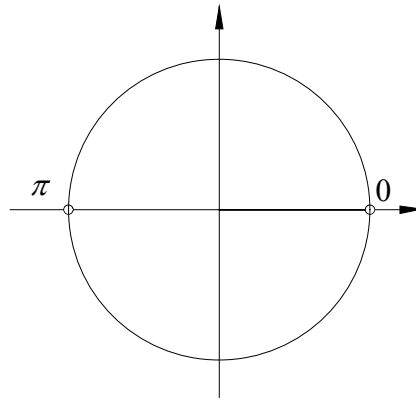


$$x_1 = \frac{5\pi}{4} + 2k\pi$$

$$x_2 = \frac{7\pi}{4} + 2k\pi$$

7) Riješi jednađbu:

$$\sin x = 0$$

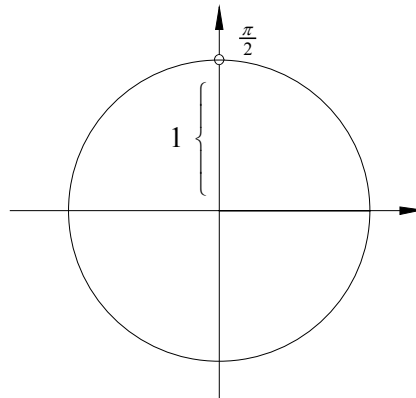


$$x = 0 + k\pi$$

$$x = k\pi$$

8) Riješi jednađbu:

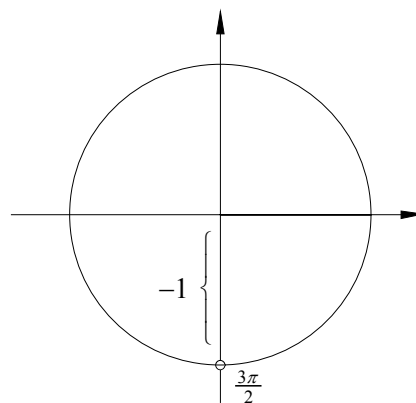
$$\sin x = 1$$



$$x = \frac{\pi}{2} + 2k\pi$$

9) Riješi jednađbu:

$$\sin x = -1$$



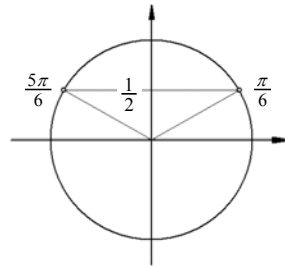
$$x = \frac{3\pi}{2} + 2k\pi$$

10) Riješi jednađzbu:  $\sin\left(x - \frac{\pi}{3}\right) = \frac{1}{2}$

$$\sin\left(x - \frac{\pi}{3}\right) = \frac{1}{2}$$

uvedemo novu nepoznanicu:  $x - \frac{\pi}{3} = t$

$$\sin t = \frac{1}{2}$$



$$t = \frac{\pi}{6} + 2k\pi$$

$$t = \frac{5\pi}{6} + 2k\pi$$

$$x - \frac{\pi}{3} = \frac{\pi}{6} + 2k\pi$$

$$x - \frac{\pi}{3} = \frac{5\pi}{6} + 2k\pi$$

$$x = \frac{\pi}{6} + \frac{\pi}{3} + 2k\pi$$

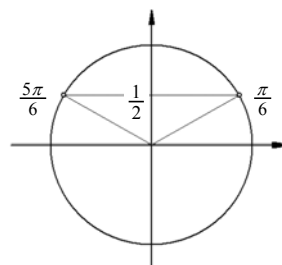
$$x = \frac{5\pi}{6} + \frac{\pi}{3} + 2k\pi$$

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

$$x_2 = \frac{7\pi}{6} + 2k\pi$$

Tu jednađzbu i možemo riješiti i kraćim postupkom:

$$\sin\left(x - \frac{\pi}{3}\right) = \frac{1}{2}$$



$$x - \frac{\pi}{3} = \frac{\pi}{6} + 2k\pi$$

$$x - \frac{\pi}{3} = \frac{5\pi}{6} + 2k\pi$$

$$x = \frac{\pi}{6} + \frac{\pi}{3} + 2k\pi$$

$$x = \frac{5\pi}{6} + \frac{\pi}{3} + 2k\pi$$

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

$$x_2 = \frac{7\pi}{6} + 2k\pi$$

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

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

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

$$\sin x = t$$

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

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

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

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

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

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

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

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

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

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

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

$$\sin x = t$$

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

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

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

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

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

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

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



Još potpuno riješenih zadataka potražite na našim web-stranicama  
[www.mim-sraga.hr](http://www.mim-sraga.hr) i [www.mim-sraga.com](http://www.mim-sraga.com)