

1. Reši enačbi :

a) $\cos x - \cos 2x = 1$

b) $\sqrt{3} \cos x + \sin x = \sqrt{3}$

2.

a) Izračunaj $\cos 2\alpha, \sin 2\alpha, \operatorname{tg} 2\alpha$, če poznaš $\sin \alpha = \frac{\sqrt{3}}{2}$ in velja $0 < \alpha < \frac{\pi}{2}$.

b) Izračunaj $y = \frac{\sin \alpha}{2 - 3 \cos \alpha}$, če je $\operatorname{tg} \frac{\alpha}{2} = \frac{1}{2}$.

3. Poenostavi izraze :

a) $\left(\frac{\sin^2 135^\circ \cos 315^\circ \sin(-45^\circ)}{\cos^2 315^\circ \sin 225^\circ \cos(-60^\circ)} \right)^2$

b) $\frac{\cos \alpha - \cos^3 \alpha}{\sin 2\alpha}$

c) $\frac{(\sin^{-1} x - \sin x) \cdot \operatorname{tg} x}{(1 + \operatorname{tg}^2 x)} - \operatorname{ctg} x \cdot \sin x$

4. Faktoriziraj izraz :

$$\sin\left(\frac{5\pi}{2} - x\right) - 2 \sin\left(\frac{7\pi}{2} - x\right) + \sin\left(\frac{9\pi}{2} - x\right)$$

5. Nariši grafe funkcij :

a) $y = -2 \cdot \cos\left(x + \frac{\pi}{3}\right) + 2$

b) $y = \operatorname{tg}\left(x - \frac{\pi}{3}\right)$

c) $y = x \cdot \sin x + 2$

d) $y = \frac{1}{1 + \sin x}$

e) $y = \sin(\ln(x + 3))$