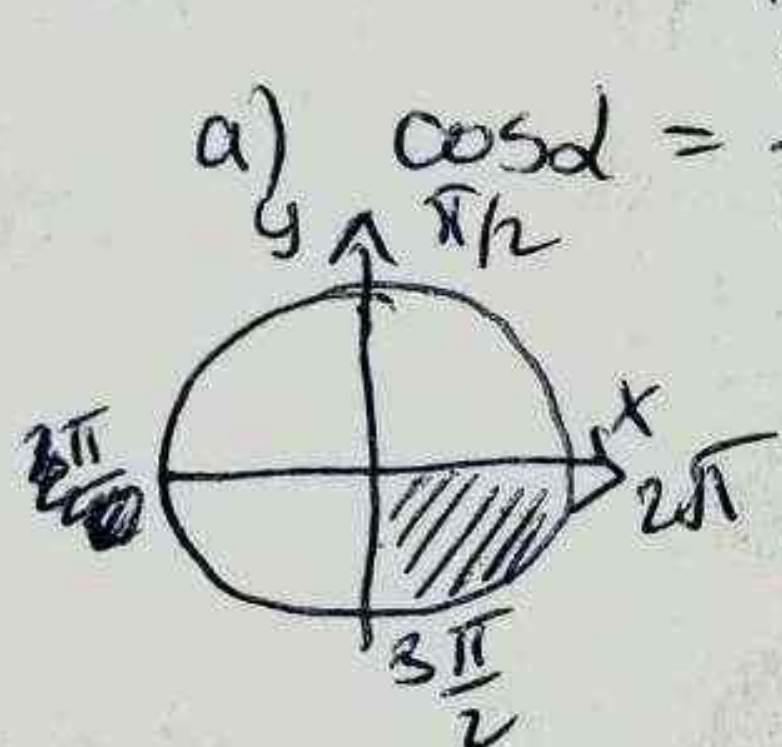


## ТРИГОНОМЕТРИЈСКЕ ФУНКЦИЈЕ ДВОСТРУКОГ УГЛА

1.  $\sin 2\alpha = 2 \sin \alpha \cdot \cos \alpha$
2.  $\cos 2\alpha = \cos^2 \alpha - \sin^2 \alpha$
3.  $\operatorname{tg} 2\alpha = \frac{2 \operatorname{tg} \alpha}{1 - \operatorname{tg}^2 \alpha}$
4.  $\operatorname{ctg} 2\alpha = \frac{\operatorname{ctg}^2 \alpha - 1}{2 \operatorname{ctg} \alpha}$

686.  $\sin 2\alpha, \cos 2\alpha, \operatorname{tg} 2\alpha$



$\alpha \in (\frac{3\pi}{2}, 2\pi)$

$\sin^2 \alpha + \cos^2 \alpha = 1$

$\sin^2 \alpha = 1 - \cos^2 \alpha$

$\sin^2 \alpha = 1 - (\frac{4}{5})^2$

$\sin^2 \alpha = 1 - \frac{16}{25}$

$\sin^2 \alpha = \frac{9}{25} \Rightarrow \sin \alpha = -\frac{3}{5}$

$\sin 2\alpha = 2 \sin \alpha \cdot \cos \alpha$   
 $\sin 2\alpha = 2 \cdot (-\frac{3}{5}) \cdot \frac{4}{5}$

$\sin 2\alpha = -\frac{24}{25}$

$\cos 2\alpha = \cos^2 \alpha - \sin^2 \alpha$

$\cos 2\alpha = (\frac{4}{5})^2 - (-\frac{3}{5})^2$

$\cos 2\alpha = \frac{16}{25} - \frac{9}{25}$

$\cos 2\alpha = \frac{7}{25}$

$\operatorname{tg} 2\alpha = \frac{\sin 2\alpha}{\cos 2\alpha} = \frac{-\frac{24}{25}}{\frac{7}{25}} = -\frac{24}{7}$

$\operatorname{ctg} 2\alpha = -\frac{7}{24}$

691. a)  $(\cos 5 + \sin 5)^2 = 1 + \sin 10$

$\cos^2 5 + 2 \sin 5 \cdot \cos 5 + \sin^2 5 = 1 + 2 \sin 5 \cdot \cos 5$

$= 1 + \sin 10$

$= 1 + \sin 10$

1. Како гласе обрасци за двоструки угао

2. Доказати обрасце преко адикцион. ф-ла

Домаћи: 692, 698, 687.