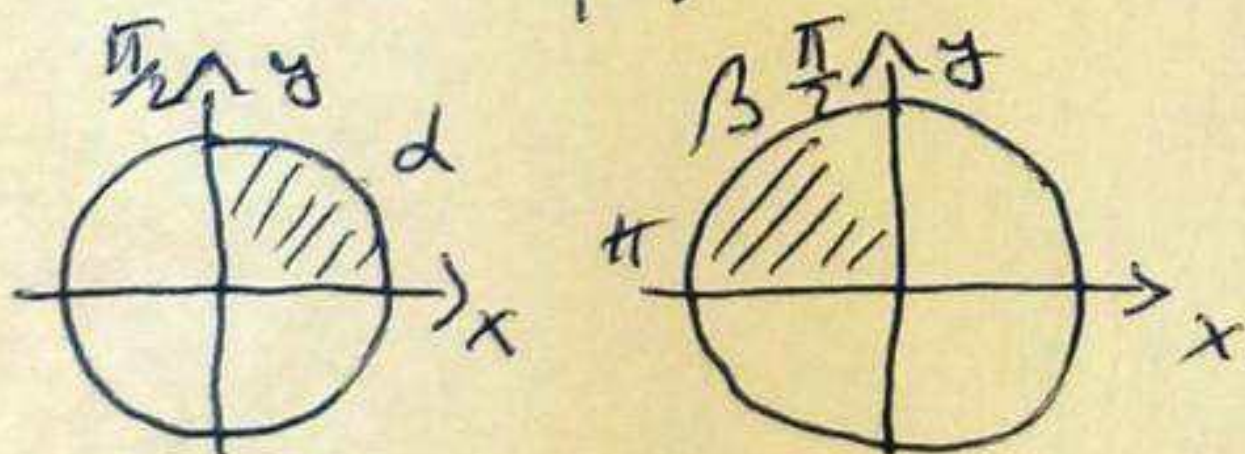


# ТРИГОНОМЕТРИЈСКЕ ФУНКЦИЈЕ ЗБИРА И РАЗЛИКЕ ДВА УГЛА АДИЦИОНЕ ФОРМУЛЕ

1.  $\sin(\alpha + \beta) = \sin\alpha \cdot \cos\beta + \cos\alpha \cdot \sin\beta$
2.  $\sin(\alpha - \beta) = \sin\alpha \cdot \cos\beta - \cos\alpha \cdot \sin\beta$
3.  $\cos(\alpha + \beta) = \cos\alpha \cdot \cos\beta - \sin\alpha \cdot \sin\beta$
4.  $\cos(\alpha - \beta) = \cos\alpha \cdot \cos\beta + \sin\alpha \cdot \sin\beta$
5.  $\operatorname{tg}(\alpha + \beta) = \frac{\operatorname{tg}\alpha + \operatorname{tg}\beta}{1 - \operatorname{tg}\alpha \cdot \operatorname{tg}\beta}$
6.  $\operatorname{tg}(\alpha - \beta) = \frac{\operatorname{tg}\alpha - \operatorname{tg}\beta}{1 + \operatorname{tg}\alpha \cdot \operatorname{tg}\beta}$
7.  $\operatorname{ctg}(\alpha + \beta) = \frac{\operatorname{ctg}\alpha \cdot \operatorname{ctg}\beta - 1}{\operatorname{ctg}\alpha + \operatorname{ctg}\beta}$
8.  $\operatorname{ctg}(\alpha - \beta) = \frac{\operatorname{ctg}\alpha \cdot \operatorname{ctg}\beta + 1}{\operatorname{ctg}\alpha - \operatorname{ctg}\beta}$

1.  $\sin 15^\circ = \sin(45^\circ - 30^\circ) = \sin 45^\circ \cdot \cos 30^\circ - \cos 45^\circ \cdot \sin 30^\circ$   
 $= \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2} - \frac{\sqrt{2}}{2} \cdot \frac{1}{2} = \frac{\sqrt{6}}{4} - \frac{\sqrt{2}}{4} = \frac{1}{4}\sqrt{2}(\sqrt{3} - 1)$

2.  $\cos(\alpha + \beta) = ?$       $\sin\alpha = \sin\beta = \frac{5}{13}$       $\alpha \in (0, \frac{\pi}{2})$   
 $\beta \in (\frac{\pi}{2}, \pi)$



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

$$\left(\frac{5}{13}\right)^2 + \cos^2\alpha = 1$$

$$\cos^2\alpha = 1 - \frac{25}{169}$$

$$\cos^2\alpha = \frac{144}{169}$$

$$\boxed{\cos\alpha = \frac{12}{13}}$$

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

$$\left(\frac{5}{13}\right)^2 + \cos^2\beta = 1$$

$$\cos^2\beta = 1 - \frac{25}{169}$$

$$\cos^2\beta = \frac{144}{169}$$

$$\boxed{\cos\beta = -\frac{12}{13}}$$

$$\cos(\alpha + \beta) = \cos\alpha \cdot \cos\beta - \sin\alpha \cdot \sin\beta = \frac{12}{13} \left(-\frac{12}{13}\right) - \frac{5}{13} \cdot \frac{5}{13}$$

$$= -\frac{144}{169} - \frac{25}{169} = -\frac{169}{169} = -1$$

1. Како гласе адicione ф-ле ?

2. Када се користе ?

3. Повишти триг. круг ?

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