Osnovni trigonometrijski omjeri

Za pravokutni trokut:

- $\sin\alpha = \frac{\text{nasuprotna kateta}}{\text{hipotenuza}}$
- $\cos\alpha = \frac{\text{priležeća kateta}}{\text{hipotenuza}}$
- $\tan\alpha = \frac{\text{nasuprotna kateta}}{\text{priležeća kateta}} = \frac{\sin\alpha}{\cos\alpha}$
- $\cot\alpha = \frac{\text{priležeća kateta}}{\text{nasuprotna kateta}} = \frac{\cos\alpha}{\sin\alpha}$

Pitagorin identitet

- $\sin^2\alpha + \cos^2\alpha = 1$
- $1 + \tan^2\alpha = \frac{1}{\cos^2\alpha}$
- $1 + \cot^2\alpha = \frac{1}{\sin^2\alpha}$

Formula za funkcije kuta od $90°$ i $180°$

- $\sin(90° - \alpha) = \cos\alpha$
- $\cos(90° - \alpha) = \sin\alpha$
- $\tan(90° - \alpha) = \cot\alpha$
- $\cot(90° - \alpha) = \tan\alpha$

Zbroj i razlika kuteva

- $\sin(\alpha \pm \beta) = \sin\alpha\cos\beta \pm \cos\alpha\sin\beta$
- $\cos(\alpha \pm \beta) = \cos\alpha\cos\beta \mp \sin\alpha\sin\beta$
- $\tan(\alpha \pm \beta) = \frac{\tan\alpha \pm \tan\beta}{1 \mp \tan\alpha\tan\beta}$

Dvostruki kutovi

- $\sin 2\alpha = 2\sin\alpha\cos\alpha$
- $\cos 2\alpha = \cos^2\alpha - \sin^2\alpha = 2\cos^2\alpha - 1 = 1 - 2\sin^2\alpha$
- $\tan 2\alpha = \frac{2\tan\alpha}{1-\tan^2\alpha}$

Funkcije negativnih kuteva

- $\sin(-\alpha) = -\sin\alpha$
- $\cos(-\alpha) = \cos\alpha$
- $\tan(-\alpha) = -\tan\alpha$
- $\cot(-\alpha) = -\cot\alpha$

Polovični kutovi

- $\sin^2\frac{\alpha}{2} = \frac{1-\cos\alpha}{2}$
- $\cos^2\frac{\alpha}{2} = \frac{1+\cos\alpha}{2}$
- $\tan\frac{\alpha}{2} = \frac{\sin\alpha}{1+\cos\alpha} = \frac{1-\cos\alpha}{\sin\alpha}$

Radijani i stupnjevi

- Pretvaranje stupnjeva u radijane: $\text{Radijani} = \frac{\pi}{180°} \cdot \text{Stupnjevi}$
- Pretvaranje radijana u stupnjeve: $\text{Stupnjevi} = \frac{180°}{\pi} \cdot \text{Radijani}$

Transformacija produkta u zbroj

- $\sin\alpha\cos\beta = \frac{1}{2}[\sin(\alpha+\beta) + \sin(\alpha-\beta)]$
- $\cos\alpha\cos\beta = \frac{1}{2}[\cos(\alpha+\beta) + \cos(\alpha-\beta)]$
- $\sin\alpha\sin\beta = \frac{1}{2}[\cos(\alpha-\beta) - \cos(\alpha+\beta)]$

Transformacija zbroja u produkt

- $\sin\alpha + \sin\beta = 2\sin\frac{\alpha+\beta}{2}\cos\frac{\alpha-\beta}{2}$
- $\sin\alpha - \sin\beta = 2\cos\frac{\alpha+\beta}{2}\sin\frac{\alpha-\beta}{2}$
- $\cos\alpha + \cos\beta = 2\cos\frac{\alpha+\beta}{2}\cos\frac{\alpha-\beta}{2}$
- $\cos\alpha - \cos\beta = -2\sin\frac{\alpha+\beta}{2}\sin\frac{\alpha-\beta}{2}$

Trigonometrijske funkcije u različitim kvadrantima

- I kvadrant: $\sin > 0, \cos > 0, \tan > 0, \cot > 0$
- II kvadrant: $\sin > 0, \cos < 0, \tan < 0, \cot < 0$
- III kvadrant: $\sin < 0, \cos < 0, \tan > 0, \cot > 0$
- IV kvadrant: $\sin < 0, \cos > 0, \tan < 0, \cot < 0$

1. Ako je poznato $\tan\alpha$:

$$\cos^2\alpha = \frac{1}{1+\tan^2\alpha}, \quad \sin^2\alpha = \frac{\tan^2\alpha}{1+\tan^2\alpha}$$

2. Ako je poznato $\sin\alpha$:

$$\cos^2\alpha = 1-\sin^2\alpha, \quad \tan\alpha = \frac{\sin\alpha}{\cos\alpha}, \quad \cot\alpha = \frac{\cos\alpha}{\sin\alpha}$$

3. Ako je poznato $\cos\alpha$:

$$\sin^2\alpha = 1-\cos^2\alpha, \quad \tan\alpha = \frac{\sin\alpha}{\cos\alpha}, \quad \cot\alpha = \frac{\cos\alpha}{\sin\alpha}$$

4. Ako je poznato $\cot\alpha$:

$$\sin^2\alpha = \frac{1}{1+\cot^2\alpha}, \quad \cos^2\alpha = \frac{\cot^2\alpha}{1+\cot^2\alpha}, \quad \tan\alpha = \frac{1}{\cot\alpha}$$

Kut (°)	sin	cos	tan	cot
$0°$	0	1	0	∞
$30°$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\sqrt{3}$
$45°$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1	1
$60°$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{\sqrt{3}}{3}$
$90°$	1	0	∞	0
$120°$	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$-\sqrt{3}$	$-\frac{\sqrt{3}}{3}$
$135°$	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	-1	-1
$150°$	$\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{3}$	$-\sqrt{3}$
$180°$	0	-1	0	∞
$210°$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\sqrt{3}$
$225°$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	1	1
$240°$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$\sqrt{3}$	$\frac{\sqrt{3}}{3}$
$270°$	-1	0	∞	0
$300°$	$-\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$-\sqrt{3}$	$-\frac{\sqrt{3}}{3}$
$315°$	$-\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	-1	-1
$330°$	$-\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{3}$	$-\sqrt{3}$
$360°$	0	1	0	∞