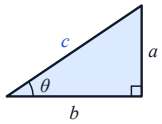
Rumus trigonometri

PERBANDINGAN TRIGONOMETRI

Sinus, kosinus, dan tangen

$$\sin\theta = \frac{a}{c}$$
$$\cos\theta = \frac{b}{c}$$
$$\tan\theta = \frac{a}{b}$$



a sisi depan
b sisi samping
c sisi miring

Identitas kebalikan

$$\csc\theta = \frac{1}{\sin\theta}$$
$$\sec\theta = \frac{1}{\cos\theta}$$
$$\cot\theta = \frac{1}{\tan\theta}$$

Identitas perbandingan

$$\tan\theta = \frac{\sin\theta}{\cos\theta}$$
$$\cot\theta = \frac{\cos\theta}{\sin\theta}$$

Sudut istimewa

Sudut	sin	cos	tan
0°	0	1	0
30° $\frac{\pi}{6}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
45° $\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
60° $\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
90° $\frac{\pi}{2}$	1	0	—

IDENTITAS

Identitas Pythagoras

$$\sin^2\theta + \cos^2\theta = 1$$
$$1 + \tan^2\theta = \sec^2\theta$$
$$1 + \cot^2\theta = \csc^2\theta$$

Identitas genap dan ganjil

$$\sin(-\theta) = -\sin\theta$$
$$\cos(-\theta) = \cos\theta$$
$$\tan(-\theta) = -\tan\theta$$

Identitas kofungsi

$$\sin(90^\circ - \theta) = \cos\theta$$
$$\cos(90^\circ - \theta) = \sin\theta$$
$$\tan(90^\circ - \theta) = \cot\theta$$

RUMUS SUDUT

Rumus jumlah dan selisih sudut

$$\sin(A \pm B) = \sin A\cos B \pm \cos A\sin B$$
$$\cos(A \pm B) = \cos A\cos B \mp \sin A\sin B$$
$$\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A\tan B}$$

Rumus sudut rangkap

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

Rumus setengah sudut

$$\sin\frac{\theta}{2} = \pm\sqrt{\frac{1-\cos\theta}{2}}$$
$$\cos\frac{\theta}{2} = \pm\sqrt{\frac{1+\cos\theta}{2}}$$
$$\tan\frac{\theta}{2} = \frac{1-\cos\theta}{\sin\theta} = \frac{\sin\theta}{1+\cos\theta}$$

Rumus penurunan pangkat

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

Rumus perkalian ke penjumlahan

$$\sin A\sin B = \tfrac{1}{2}[\cos(A-B) - \cos(A+B)]$$
$$\cos A\cos B = \tfrac{1}{2}[\cos(A-B) + \cos(A+B)]$$
$$\sin A\cos B = \tfrac{1}{2}[\sin(A+B) + \sin(A-B)]$$

Rumus penjumlahan ke perkalian

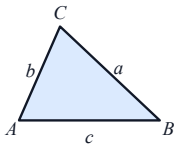
$$\sin A + \sin B = 2\sin\frac{A+B}{2}\cos\frac{A-B}{2}$$
$$\sin A - \sin B = 2\cos\frac{A+B}{2}\sin\frac{A-B}{2}$$
$$\cos A + \cos B = 2\cos\frac{A+B}{2}\cos\frac{A-B}{2}$$
$$\cos A - \cos B = -2\sin\frac{A+B}{2}\sin\frac{A-B}{2}$$

SEGITIGA

Aturan sinus

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

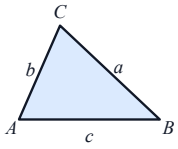
A, B, C sudut
a, b, c sisi di depan sudut-sudut itu



Aturan kosinus

$$c^2 = a^2 + b^2 - 2ab\cos C$$

A, B, C sudut
a, b, c sisi di depan sudut-sudut itu



Luas segitiga

LUAS
$$A = \tfrac{1}{2}ab\sin C$$

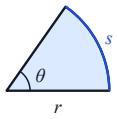
C sudut di antara sisi a dan b

RADIAN DAN GRAFIK

Radian, busur, dan juring

$$180^\circ = \pi \text{ rad}$$

DERAJAT KE RADIAN
$$\theta_{\text{rad}} = \theta^\circ \cdot \frac{\pi}{180^\circ}$$



PANJANG BUSUR
$$s = r\theta$$

LUAS JURING
$$A = \tfrac{1}{2}r^2\theta$$

r jari-jari θ sudut dalam radian s panjang busur

Grafik sinus dan kosinus

$$y = A\sin(Bx - C) + D$$

AMPLITUDO
$$|A|$$

PERIODE
$$\frac{2\pi}{|B|}$$

PERGESERAN FASE
$$\frac{C}{B}$$

GARIS TENGAH
$$y = D$$