

FUNGSI TRIGONOMETRI

Sudut positif dan sudut negatif

Enam fungsi trigonometri bagi sebarang sudut

$\sin \theta$, $\cos \theta$, $\tan \theta$
 $\cot \theta$, $\sec \theta$, $\csc \theta$

Nisbah trigonometri bagi sudut-sudut khusus 30° , 45° , 60°

Rumus sudut separuh

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

Membuktikan identiti trigonometri

Tiga identiti asas

$$\begin{aligned} \sin^2 A + \cot^2 A &= 1 \\ \tan^2 A + 1 &= \sec^2 A \\ 1 + \cot^2 A &= \csc^2 A \end{aligned}$$

Rumus sudut majmuk

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

Rumus sudut berganda

$$\begin{aligned} \sin 2A &= 2 \sin A \cos A \\ \cos 2A &= \cos^2 A - \sin^2 A \\ &= 2 \cos^2 A - 1 \\ &= 1 - 2 \sin^2 A \\ \tan 2A &= \frac{2 \tan A}{1 - \tan^2 A} \end{aligned}$$

Menyelesaikan persamaan trigonometri

Graf bagi fungsi trigonometri

$$\begin{aligned} y &= p \sin qx \\ y &= p \cos qx \\ y &= p \tan qx \end{aligned}$$

