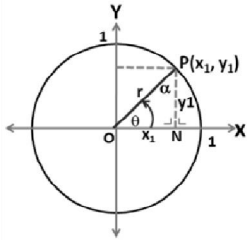


Tanda Perbandingan Trigonometri Sudut di

kuadran I

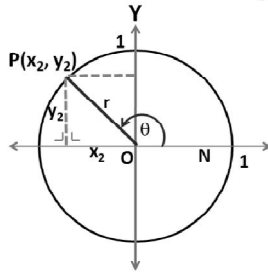


$$\sin \theta = \frac{y_1}{r} = \frac{+}{+} = +$$

$$\cos \theta = \frac{x_1}{r} = \frac{+}{+} = +$$

$$\tan \theta = \frac{y_1}{x_1} = \frac{+}{+} = +$$

Tanda Perbandingan Trigonometri Sudut di kuadran II



$$\sin \theta = \frac{y_2}{r} = \frac{+}{+} = +$$

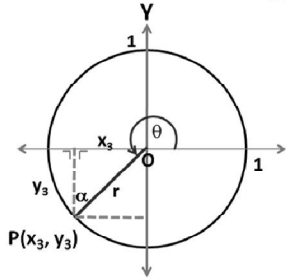
$$\cos \theta = \frac{x_2}{r} = \frac{-}{+} = -$$

$$\tan \theta = \frac{y_2}{x_2} = \frac{+}{-} = -$$

KESIMPULAN

	Tanda		
	sin θ	cos θ	tan θ
Kuadran I	+	+	+
Kuadran II	+	-	-
Kuadran III	-	-	+
Kuadran IV	-	+	-

Tanda Perbandingan Trigonometri Sudut di kuadran III

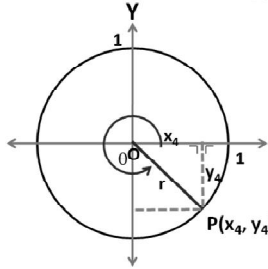


$$\sin \theta = \frac{y_3}{r} = \frac{-}{+} = -$$

$$\cos \theta = \frac{x_3}{r} = \frac{-}{+} = -$$

$$\tan \theta = \frac{y_3}{x_3} = \frac{-}{-} = +$$

Tanda Perbandingan Trigonometri Sudut di kuadran IV

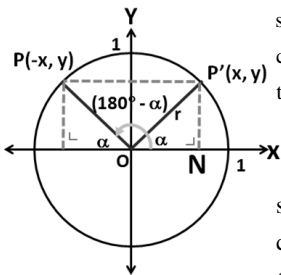


$$\sin \theta = \frac{y_4}{r} = \frac{-}{+} = -$$

$$\cos \theta = \frac{x_4}{r} = \frac{+}{+} = +$$

$$\tan \theta = \frac{y_4}{x_4} = \frac{-}{+} = -$$

Rangkuman SUDUT BERELASI



$$\sin(180^\circ - \alpha) = \sin \alpha$$

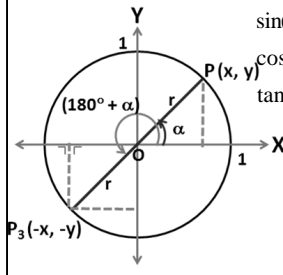
$$\cos(180^\circ - \alpha) = -\cos \alpha$$

$$\tan(180^\circ - \alpha) = -\tan \alpha$$

$$\sin(\pi - \theta) = \sin \theta$$

$$\cos(\pi - \theta) = -\cos \theta$$

$$\tan(\pi - \theta) = -\tan \theta$$



$$\sin(180^\circ + \alpha) = -\sin \alpha$$

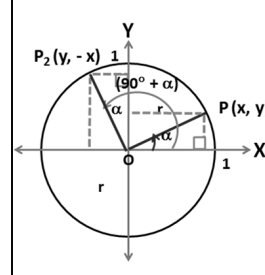
$$\cos(180^\circ + \alpha) = -\cos \alpha$$

$$\tan(180^\circ + \alpha) = \tan \alpha$$

$$\sin(\pi + \theta) = -\sin \theta$$

$$\cos(\pi + \theta) = -\cos \theta$$

$$\tan(\pi + \theta) = \tan \theta$$



$$\sin(90^\circ + \alpha) = \cos \alpha$$

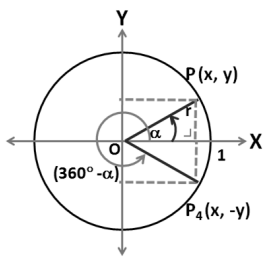
$$\cos(90^\circ + \alpha) = -\sin \alpha$$

$$\tan(90^\circ + \alpha) = -\cot \alpha$$

$$\sin\left(\frac{1}{2}\pi + \theta\right) = \cos \theta$$

$$\cos\left(\frac{1}{2}\pi + \theta\right) = \sin \theta$$

$$\tan\left(\frac{1}{2}\pi + \theta\right) = \cot \theta$$



$$\sin(360^\circ - \alpha) = -\sin \alpha$$

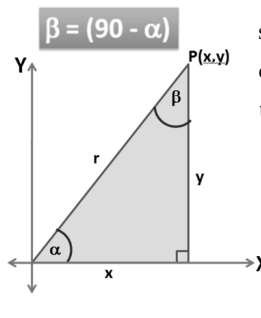
$$\cos(360^\circ - \alpha) = \cos \alpha$$

$$\tan(360^\circ - \alpha) = -\tan \alpha$$

$$\sin(2\pi - \theta) = -\sin \theta$$

$$\cos(2\pi - \theta) = \cos \theta$$

$$\tan(2\pi - \theta) = -\tan \theta$$



$$\sin \alpha = \cos(90^\circ - \alpha)$$

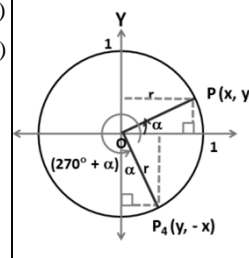
$$\cos \alpha = \sin(90^\circ - \alpha)$$

$$\tan \alpha = \cot(90^\circ - \alpha)$$

$$\sin\left(\frac{1}{2}\pi - \theta\right) = \cos \theta$$

$$\cos\left(\frac{1}{2}\pi - \theta\right) = \sin \theta$$

$$\tan\left(\frac{1}{2}\pi - \theta\right) = \cot \theta$$



$$\sin(270^\circ + \alpha) = -\cos \alpha$$

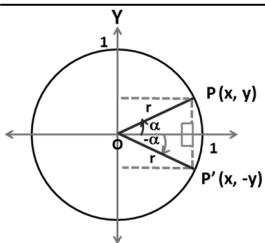
$$\cos(270^\circ + \alpha) = +\sin \alpha$$

$$\tan(270^\circ + \alpha) = -\cot \alpha$$

$$\sin\left(\frac{3}{2}\pi + \theta\right) = -\cos \theta$$

$$\cos\left(\frac{3}{2}\pi + \theta\right) = \sin \theta$$

$$\tan\left(\frac{3}{2}\pi + \theta\right) = -\cot \theta$$



$$\sin -\alpha = -\sin \alpha$$

$$\cos -\alpha = \cos \alpha$$

$$\tan -\alpha = -\tan \alpha$$

$$\sin(\alpha + k \cdot 360^\circ) = \sin \alpha$$

$$\cos(\alpha + k \cdot 360^\circ) = \cos \alpha$$

$$\tan(\alpha + k \cdot 360^\circ) = \tan \alpha$$

$$\sin(\theta + k \cdot 2\pi) = \sin \theta$$

$$\cos(\theta + k \cdot 2\pi) = \cos \theta$$

$$\tan(\theta + k \cdot 2\pi) = \tan \theta$$

Kesimpulan :: 1. fungsi trigonometri $\begin{cases} 180^\circ \pm \alpha \\ 360^\circ \pm \alpha \end{cases}$ nama tetap
tanda sesuai kuadran

2. fungsi trigonometri $\begin{cases} 90^\circ \pm \alpha \\ 270^\circ \pm \alpha \end{cases}$ nama berubah
tanda sesuai kuadran

Contoh Soal :

Tentukan nilai : a. $\sin 225^\circ$, b. $\sin 120^\circ$

Jawab :

a. $\sin 225^\circ = \sin(180^\circ + 45^\circ) = -\sin 45^\circ = -\frac{\sqrt{2}}{2}$

b. $\sin 120^\circ = \sin(180^\circ - 60^\circ) = +\sin 60^\circ = +\frac{\sqrt{3}}{2}$

TUGAS!!

Kerjakan soal-soal berikut ini pada buku tugas kalian, kumpulkan!

Tentukan nilai dari :

1. $\cos 240^\circ$
2. $\cos 150^\circ$
3. $\sin 300^\circ$
4. $\tan 135^\circ$
5. $\tan 300^\circ$
6. $\tan 120^\circ$

Ubah perbandingan trigonometri ini menjadi perbandingan trigonometri sudut lancip ,hitung (soal no 6 - 10):

7. $\cos 240^\circ$
8. $\cos -135^\circ$
9. $\sin -45^\circ$
10. $\tan 390^\circ$