

KEGIATAN

Menentukan penyelesaian
persamaan trigonometri
bentuk kuadrat

Tentukan himpunan penyelesaian dari
persamaan $\cos^2 2x - 3 \cos 2x + 2 = 0$
untuk $0^\circ \leq x \leq 180^\circ$

Penyelesaian:

Misal : $\cos 2x = p$

$$p^2 - 3p + 2 = 0$$

Difaktorkan menjadi:

$$(\dots - \dots)(\dots - \dots) = 0$$

$$(\dots - \dots) = 0$$

$$p = \dots$$

INGAT!!!

Nilai $\cos -1 \leq x \leq 1$

$$p = \dots$$

(i)

Rumus yang akan digunakan yaitu:

$$x = \alpha + k \cdot 360^\circ$$



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



Substitusikan nilai α

$$2x = (\dots\dots^\circ) + k(\dots\dots^\circ) \text{ Dibagi dengan} (\dots\dots)$$

$$x = (\dots\dots^\circ) + k(\dots\dots^\circ)$$

$$x = k(\dots\dots^\circ)$$

$$k = 0$$

$$k = \dots\dots$$

$$x = (\dots\dots) \times (\dots\dots^\circ)$$

$$x = (\dots\dots) \times (\dots\dots^\circ)$$

$$x = \dots\dots^\circ$$

$$x = \dots\dots^\circ$$

(ii)

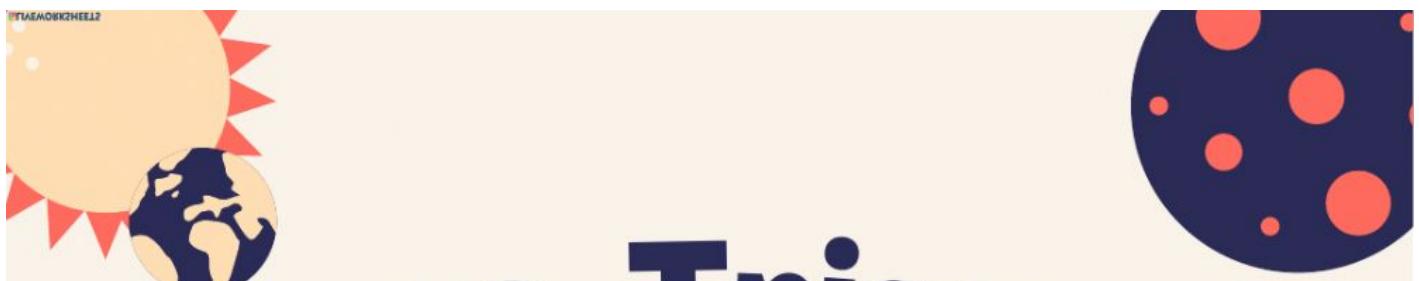
Rumus yang akan digunakan yaitu:

$$x = \alpha + k \cdot 360^\circ$$



$$x = -\alpha + k \cdot 360^\circ$$





Pers. Trigono

Tentukan himpunan penyelesaian daari
persamaan $2\sin^2x + 5 \sin x - 3 = 0$
untuk $-\frac{\pi}{2} < x < \frac{\pi}{2}$

Penyelesaian:

$$2\sin^2x + 5 \sin x - 3 = 0$$

Misalkan : $p = \sin x$

$$\dots\dots p^2 + 5p - \dots\dots = 0$$

Difaktorkan menjadi:

$$(\dots\dots - \dots\dots)(\dots\dots + \dots\dots) = 0$$

INGAT!!!

Nilai $\sin -1 \leq x \leq 1$

$$(\dots\dots - \dots\dots) = 0 \quad (\dots\dots + \dots\dots) = 0$$

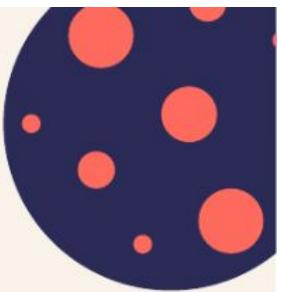
$$\dots\dots p = \dots\dots \quad p = \dots\dots$$

$$p = \dots\dots$$

$$\sin x = \dots\dots$$

Diubah menjadi:

$$\sin x = \sin \dots\dots \pi$$



Rumus yang akan digunakan yaitu:

$$x = -\alpha + k \cdot 2\pi$$



$$x = (\pi - \alpha) + k \cdot \pi$$



$$x = (\pi - \alpha) + k \cdot 2\pi$$



Substitusikan nilai α :

$$x = (\dots\dots\dots) + k \cdot (\dots\dots\dots)$$

$$x = \dots\dots\dots \pi + k \cdot (\dots\dots\dots)$$

$$k = -1$$

$$x = \dots\dots\dots + (\dots\dots\dots)(\dots\dots\dots)$$

$$x = \dots\dots\dots + \dots\dots\dots$$

$$x = \dots\dots\dots$$

$$k = 0$$

$$x = \dots\dots\dots + (\dots\dots\dots)(\dots\dots\dots)$$

$$x = \dots\dots\dots + \dots\dots\dots$$

$$x = \dots\dots\dots$$

$$k = 1$$

$$x = \dots\dots\dots + (\dots\dots\dots)(\dots\dots\dots)$$

$$x = \dots\dots\dots + \dots\dots\dots$$

$$x = \dots\dots\dots$$