

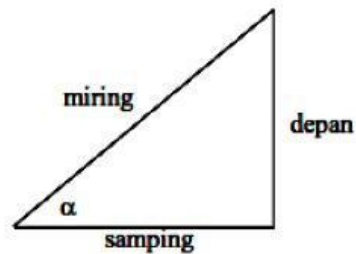
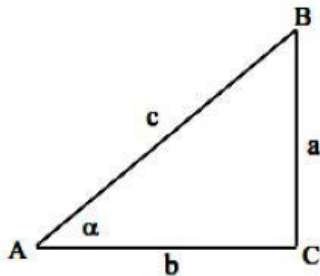
Perbandingan Trigonometri

Lembar Kerja Peserta Didik (LKPD)

Nama:

Kelas:

Perhatikan segitiga siku-siku ABC disamping. Dengan titik sudut siku-siku di C.
Panjang sisi dihadapan sudut A (sisi depan) dinamakan a atau
Panjang sisi dihadapan sudut B (sisi samping) dinamakan b atau
Panjang sisi dihadapan sudut C (sisi miring) dinamakan c atau



Yang dimaksud nilai perbandingan dalam trigonometri adalah enam nilai perbandingan sisi sisi segitiga siku-siku, yaitu :

$$\sin \alpha = \frac{a}{c} = \frac{\text{sisi depan}}{\text{sisi miring}}$$

$$\operatorname{cosec} \alpha = \frac{c}{a} = \frac{\text{sisi miring}}{\text{sisi depan}}$$

$$\cos \alpha = \frac{b}{c} = \frac{\text{sisi samping}}{\text{sisi miring}}$$

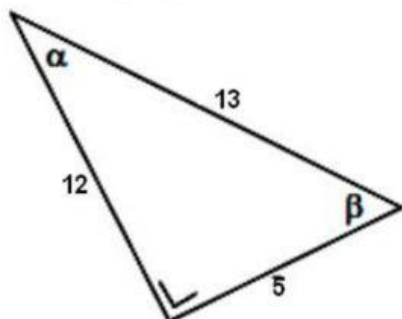
$$\sec \alpha = \frac{c}{b} = \frac{\text{sisi miring}}{\text{sisi samping}}$$

$$\tan \alpha = \frac{a}{b} = \frac{\text{sisi depan}}{\text{sisi samping}}$$

$$\cotan \alpha = \frac{b}{a} = \frac{\text{sisi samping}}{\text{sisi depan}}$$

Find the Solution

01. Dari segitiga siku-siku disamping tentukanlah nilai dari :



(a) $\sin \alpha$

(c) $\tan \alpha$

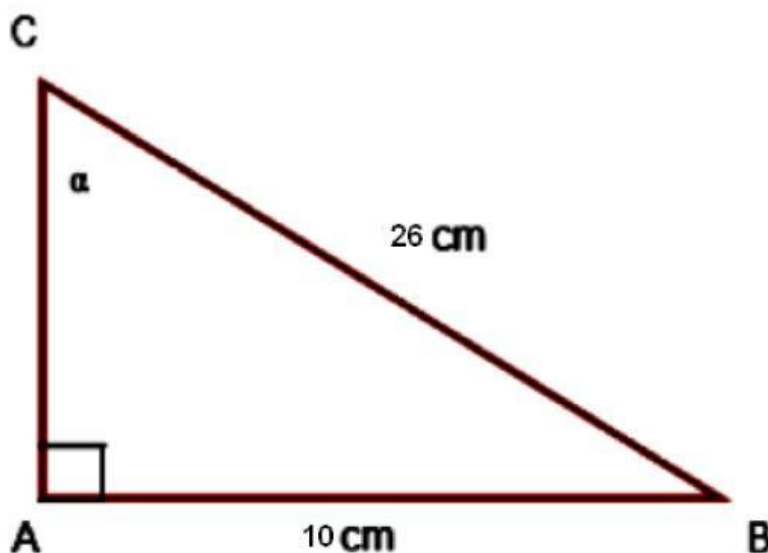
(e) $\cos \beta$

(b) $\cos \alpha$

(d) $\sin \beta$

(f) $\tan \beta$

02. Perhatikan segitiga siku-siku ABC di bawah.



Tentukan:

a. Panjang AC

b. $\sin \alpha$, $\cos \alpha$, $\tan \alpha$

c. $\sec \alpha$, $\csc \alpha$, dan $\cotan \alpha$

3. Diberikan $\sin A = \frac{3}{5}$. Tentukan lima perbandingan trigonometri yang lain.

Solution:

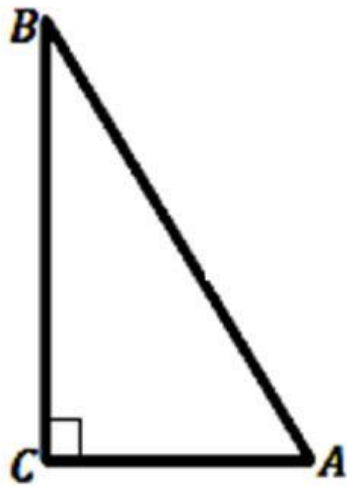
1. (a) $\sin \alpha = \frac{\text{depan}}{\text{miring}} = -$ (b) $\cos \alpha = \frac{\text{samping}}{\text{miring}} = -$
(c) $\tan \alpha = \frac{\text{depan}}{\text{samping}} = -$ (d) $\sin \beta = \frac{\text{depan}}{\text{miring}} = -$
(e) $\cos \beta = \frac{\text{samping}}{\text{miring}} = -$ (f) $\tan \beta = \frac{\text{depan}}{\text{samping}} = -$

2 a. Diketahui: Panjang AB = cm dan BC = cm.
Dengan menggunakan Teorema Pythagoras diperoleh:
 $BC^2 = AC^2 + AB^2 \leftrightarrow AC^2 = BC^2 - AB^2$
 $\leftrightarrow AC = \sqrt{BC^2 - AB^2}$
 $\leftrightarrow AC = \sqrt{2^2 - 1^2} = \sqrt{4 - 1} = \sqrt{3} =$
Jadi Panjang AC = cm.

b. $\sin \alpha = \frac{\text{sisi depan sudut}}{\text{sisi miring segitiga}} = \frac{AB}{BC} = - = -$
 $\cos \alpha = \frac{\text{sisi samping sudut}}{\text{sisi miring segitiga}} = \frac{AC}{BC} = - = -$
 $\tan \alpha = \frac{\text{sisi depan sudut}}{\text{sisi samping sudut}} = \frac{AB}{AC} = - = -$

c. $\sec \alpha = \frac{\text{sisi miring segitiga}}{\text{sisi samping sudut}} = \frac{CB}{AC} = - = -$
 $\operatorname{cosec} \alpha = \frac{\text{sisi miring segitiga}}{\text{sisi depan sudut}} = \frac{CB}{AB} = - = -$
 $\cotan \alpha = \frac{\text{sisi samping sudut}}{\text{sisi depan sudut}} = \frac{AC}{AB} = - = -$

3.



$$AC^2 = AB^2 - BC^2$$

$$AC = \sqrt{AB^2 - BC^2} = \sqrt{2^2 - 2^2}$$

$$= \sqrt{\quad - \quad} = \sqrt{\quad} = \quad$$

$$\cos A = \frac{\quad}{\quad}$$

$$\sec A = \frac{\quad}{\quad}$$

$$\tan A = \frac{\quad}{\quad}$$

$$\cot A = \frac{\quad}{\quad}$$

$$\operatorname{cosec} A = \frac{\quad}{\quad}$$