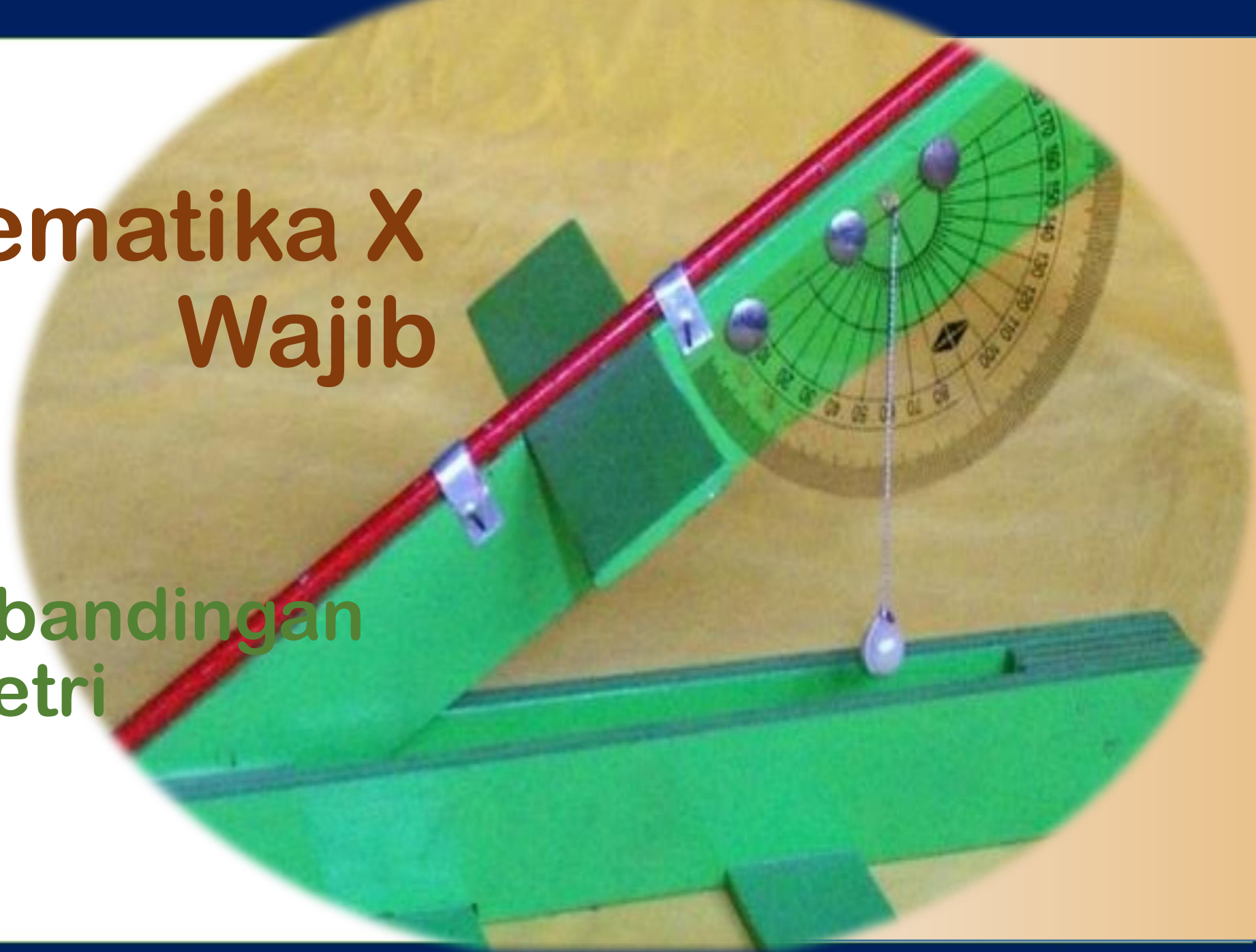




Matematika X Wajib

Perbandingan Trigonometri

H Herlina T E





Kompetensi Dasar

- 3.7. Menjelaskan rasio trigonometri pada segi tiga siku siku
- 4.7. Menyelesaikan masalah kontekstual yang berkaitan dengan rasio trigonometri pada segitiga siku- siku.

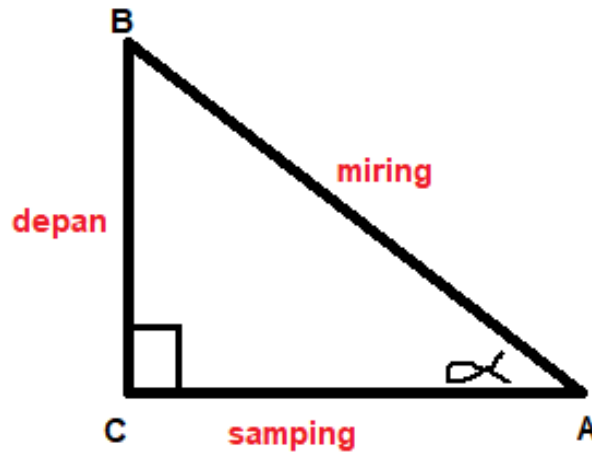


Tujuan pembelajaran

- A. Menentukan perbandingan trigonometri pada segitiga siku-siku
- B. Menentukan penyelesaian permasalahan perbandingan trigonometri



Perbandingan Trigonometri



sin de mir

$$\text{Sin} = \frac{\text{depan}}{\text{miring}} \rightarrow \text{cosec} = \frac{1}{\sin} \rightarrow \text{cosec} = \frac{\text{miring}}{\text{depan}}$$

co sa mir

$$\text{Cosinus} = \frac{\text{samping}}{\text{miring}} \rightarrow \text{Sec} = \frac{1}{\cos} \rightarrow \text{Sec} = \frac{\text{miring}}{\text{samping}}$$

tan de sa

$$\text{Tangen} = \frac{\text{depan}}{\text{samping}} \rightarrow \text{cotan} = \frac{1}{\tan} \rightarrow \text{cotan} = \frac{\text{samping}}{\text{depan}}$$



Latihan 1

Tentukan nilai trigonometri sudut α pada segitiga di samping !



$$\textcircled{1} \sin \alpha = \frac{\text{de}}{\text{mir}} = \frac{12}{13}$$

$$\textcircled{2} \cos \alpha = \frac{\text{sa}}{\text{mir}} = \frac{5}{13}$$

$$\textcircled{3} \tan \alpha = \frac{\text{de}}{\text{sa}} = \frac{12}{5}$$

$$\textcircled{4} \operatorname{cosec} \alpha = \frac{1}{\sin \alpha} = \frac{13}{12}$$

$$\textcircled{5} \sec \alpha = \frac{1}{\cos \alpha} = \frac{13}{5}$$

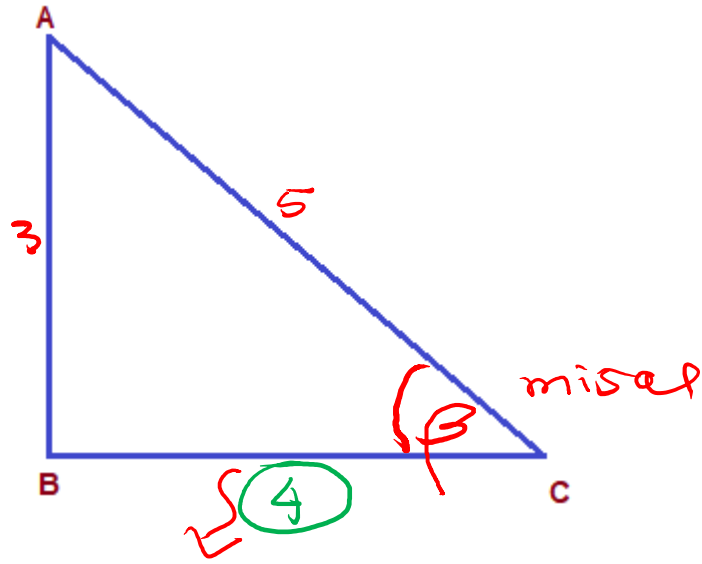
$$\textcircled{6} \cotan \alpha = \frac{1}{\tan \alpha} = \frac{5}{12}$$



Latihan 2

Diketahui $\sin \beta = \frac{3}{5}$, tentukan nilai cos β dan cotan β !

depan
miring



$$\begin{aligned}\sqrt{5^2 - 3^2} \\ \sqrt{25 - 9} \\ \sqrt{16} &= 4\end{aligned}$$

$$\begin{aligned}\cos \beta &= \frac{\text{sa}}{\text{mir}} \\ &= \frac{4}{5} \\ &= \end{aligned}$$

$$\begin{aligned}\left\{ \begin{aligned} \cotan \beta &= \frac{1}{\tan \beta} \\ \tan \beta &= \frac{\text{de.}}{\text{sa}} \end{aligned} \right. \\ \cotan \beta &= \frac{\text{sa}}{\text{de}} \\ &= \frac{4}{3} \\ &= \end{aligned}$$



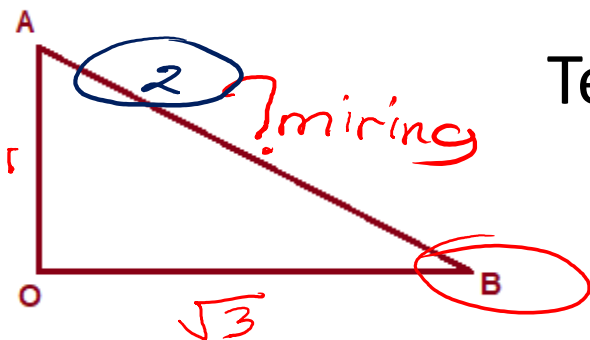
Latihan 3

Diketahui $\tan B = \frac{1}{\sqrt{3}}$!

depan

samping

Tentukanlah hasil dari $\frac{\sin B (\cotan B)}{\cos A}$



$$\begin{aligned} \text{miring} &= \sqrt{(\sqrt{3})^2 + (1)^2} \\ &= \sqrt{3 + 1} \\ &= \sqrt{4} \\ &= 2 \end{aligned}$$

$$\sin B = \frac{1}{2}$$

$$\cotan B = \frac{1}{\tan B}$$

$$\begin{aligned} &= \frac{1}{\frac{1}{\sqrt{3}}} \\ &= \sqrt{3} \end{aligned}$$

$$\cos A = \frac{\sqrt{3}}{2}$$

$$\begin{aligned} &\frac{\sin B (\cotan B)}{\cos A} \\ &= \frac{\frac{1}{2} (\sqrt{3})}{\frac{\sqrt{3}}{2}} \\ &= \frac{\sqrt{3}}{2} \times \frac{2}{\sqrt{3}} \\ &= 1 \end{aligned}$$

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