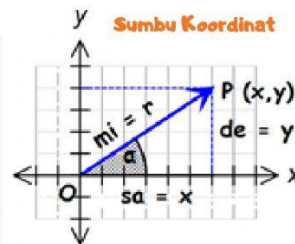
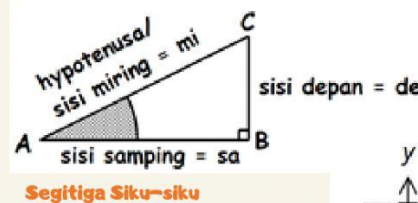


PERBANDINGAN TRIGONOMETRI PADA SEGITIGA SIKU-SIKU DAN SUMBU KOORDINAT

APA ITU DEFINISI PERBANDINGAN TRIGONOMETRI?

Perbandingan Trigonometri adalah materi yang mempelajari tentang perbandingan sisi-sisi suatu segitiga siku-siku



RUMUS-RUMUS PERBANDINGAN TRIGONOMETRI

SIN
de mi

$$1. \text{Sinus } A = \sin A = \sin \alpha = \frac{\text{depan}}{\text{miring}} = \frac{de}{mi} = \frac{y}{r} = \frac{1}{\csc A}$$

$$2. \text{Cosinus } A = \cos A = \cos \alpha = \frac{\text{samping}}{\text{miring}} = \frac{sa}{mi} = \frac{x}{r} = \frac{1}{\sec A}$$

COS
sa mi

TAN
de sa

$$3. \text{Tangen } A = \tan A = \tan \alpha = \frac{\text{depan}}{\text{samping}} = \frac{de}{sa} = \frac{y}{x} = \frac{1}{\cot A} = \frac{\sin A}{\cos A}$$

$$4. \text{Cosec } A = \csc A = \csc \alpha = \frac{\text{miring}}{\text{depan}} = \frac{mi}{de} = \frac{r}{y} = \frac{1}{\sin A}$$

CSC
mi de

SEC
mi sa

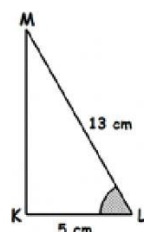
$$5. \text{Secan } A = \sec A = \sec \alpha = \frac{\text{miring}}{\text{samping}} = \frac{mi}{sa} = \frac{r}{x} = \frac{1}{\cos A}$$

$$6. \text{Cotangen } A = \cot A = \cot \alpha = \frac{\text{samping}}{\text{depan}} = \frac{sa}{de} = \frac{x}{y} = \frac{1}{\tan A} = \frac{\cos A}{\sin A}$$

COT
sa de

Latihan Soal I

1) Perhatikan $\triangle KLM$ berikut:



Tentukan:

- a) Panjang sisi KM
- b) Sin L
- c) Cos L
- d) Tan L
- e) csc L
- f) sec L
- g) cot L



Penyelesaian:

a) Panjang sisi KM

Jawab:

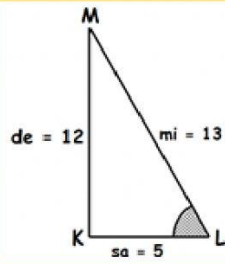
$$KM^2 = LM^2 - KL^2$$

$$KM^2 = 13^2 - 5^2$$

$$KM^2 = \square - \square$$

$$KM^2 = \square$$

$$KM = \sqrt{\square} = \square$$



b) $\sin L = \frac{de}{mi} = \frac{5}{13}$

e) $\csc L = \frac{mi}{de} = \frac{\square}{\square}$

c) $\cos L = \frac{sa}{mi} = \frac{\square}{13}$

f) $\sec L = \frac{mi}{sa} = \frac{\square}{\square}$

d) $\tan L = \frac{de}{sa} = \frac{\square}{\square}$

g) $\cot L = \frac{sa}{de} = \frac{\square}{\square}$

Latihan Soal 2

2) Diketahui nilai $\tan P = 0,75$, Tentukan:

a) Panjang de, sa, mi

b) $\sin P$

d) $\csc P$

c) $\cos P$

e) $\sec P$

f) $\cot P$

Penyelesaian :

Jawab:

$$\tan P = 0,75 = \frac{75}{100} = \frac{3}{\square} = \frac{de}{sa}$$

$$de = 3 \text{ \& } sa = \square \quad mi^2 = de^2 + sa^2$$

$$mi^2 = \square^2 + \square^2$$

$$mi^2 = \square + \square$$

$$mi^2 = \square$$

$$mi = \sqrt{\square} = \square$$

b) $\sin P = \frac{de}{mi} = \frac{\square}{\square}$

c) $\cos P = \frac{sa}{mi} = \frac{\square}{\square}$

d) $\csc P = \frac{mi}{de} = \frac{\square}{\square}$

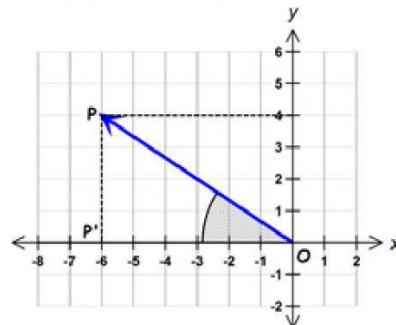
e) $\sec P = \frac{mi}{sa} = \frac{\square}{\square}$

f) $\cot P = \frac{sa}{de} = \frac{\square}{\square}$



Latihan Soal 3

3) Perhatikan sumbu koordinat berikut ini:



a) Tentukan panjang de, sa, mi

b) $\sin \angle POP'$

e) $\csc \angle POP'$

c) $\cos \angle POP'$

f) $\sec \angle POP'$

d) $\tan \angle POP'$

g) $\cot \angle POP'$

Penyelesaian :

Jawab:

$$de = PP' = \boxed{}$$

$$sa = OP' = -6$$

$$mi^2 = de^2 + sa^2$$

$$mi^2 = \boxed{}^2 + (\boxed{})^2$$

$$mi^2 = \boxed{} + \boxed{}$$

$$mi^2 = \boxed{}$$

$$mi = \sqrt{\boxed{}} = \boxed{}\sqrt{13}$$

$$e) \sin \angle POP' = \frac{de}{mi} = \frac{4}{2\sqrt{13}} \cdot \frac{\sqrt{13}}{\sqrt{13}} = \frac{2}{13}\sqrt{13}$$

$$f) \cos \angle POP' = \frac{sa}{mi} = \frac{-6}{\boxed{}\sqrt{13}} \cdot \frac{\sqrt{13}}{\sqrt{13}} = -\frac{\boxed{}}{\boxed{}}\sqrt{13}$$

$$g) \tan \angle POP' = \frac{de}{sa} = \frac{\boxed{}}{\boxed{}} = -\frac{\boxed{}}{3}$$

$$e) \csc \angle POP' = \frac{mi}{de} = \frac{\boxed{}\sqrt{13}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}\sqrt{13}$$

$$f) \sec \angle POP' = \frac{mi}{sa} = \frac{\boxed{}\sqrt{13}}{-6} = -\frac{\boxed{}}{\boxed{}}\sqrt{13}$$

$$g) \cot \angle POP' = \frac{sa}{de} = \frac{\boxed{}}{\boxed{}} = -\frac{3}{\boxed{}}$$

Latihan Soal 6

Pasangkan perbandingan trigonometri di kolom kiri
Dengan rumusnya di kolom kanan!

Cos	•	•	$\frac{de}{mi}$
Tan	•	•	$\frac{mi}{de}$
Sin	•	•	$\frac{de}{sa}$
Sec	•	•	$\frac{mi}{sa}$
Csc	•	•	$\frac{sa}{de}$
Cot	•	•	$\frac{sa}{mi}$

Tentukan rumus perbandingan trigonometri yang saling berkebalikan,
Dengan cara memindahkan kolom-kolom ke bagian bawahnya!

Sinus

Cosinus

Tangen

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Pindahkan yang ada disini ke kolom kuning:

Cosecan

Cotangen

Secan