

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) evaluate the primary **and reciprocal trigonometric** ratios.
- b) find unknowns sides and angles using the primary and reciprocal trigonometric ratios.

MCR 3UI

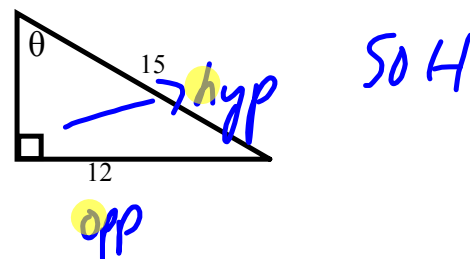
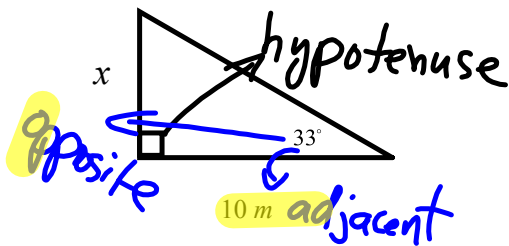
5.1 Trigonometric Ratios of Acute Angles

SOH CAH TOA

Date: Apr. 23/18

Ex.1 Calculate x ,
to two decimal places.

Ex.2 Calculate θ ,
to one decimal place. *theta*



TOA: $\tan 33^\circ = \frac{x}{10}$

$\sin \theta = \frac{12}{15}$

$x = 10 \tan 33^\circ$

$\theta = \sin^{-1}\left(\frac{12}{15}\right)$

≈ 6.494

$\approx 53.13^\circ$

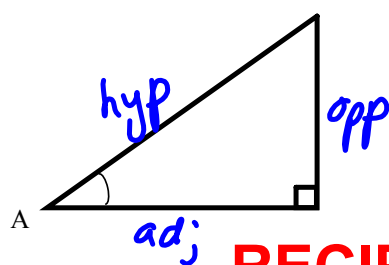
$\approx 6.49 \text{ m}$

$\approx 53.13^\circ$

6.494

53.13





SOH CAH TOA

$$\sin A = \frac{opp}{hyp} \quad \cos A = \frac{adj}{hyp} \quad \tan A = \frac{opp}{adj}$$

RECIPROCAL Trig Ratios

COSECANT OF "A"

$$\csc A = \frac{hyp}{opp}$$

$$\csc A = \frac{1}{\sin A}$$

SECANT OF "A"

$$\sec A = \frac{hyp}{adj}$$

$$\sec A = \frac{1}{\cos A}$$

COTANGENT OF "A"

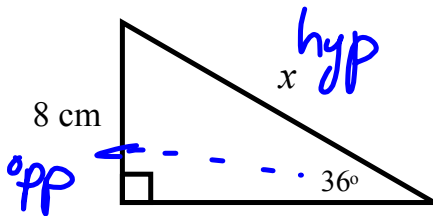
$$\cot A = \frac{adj}{opp}$$

$$\cot A = \frac{1}{\tan A}$$

The "rule" of "co"

Ex.3 Using a reciprocal trig ratio, calculate x , to two decimal places.

Label 1st



$$\frac{\text{hyp}}{\text{opp}} = \csc 36^\circ$$

$$\csc 36^\circ = \frac{x}{8}$$

$$\left[\sin 36^\circ = \frac{8}{x} \right]$$

$$\begin{aligned} x &= 8 \csc 36^\circ \\ &= 8 \left(\frac{1}{\sin 36^\circ} \right) \\ &\approx 13.610 \end{aligned}$$

$$\approx 13.61 \text{ cm}$$

$$\left. \begin{array}{l} -1 \\ X \\ \hline \frac{1}{X} \end{array} \right\} 13.610$$

Ex.4 Calculate θ , to one decimal place.

$$\frac{1}{\sec \theta} = \frac{1}{1.65}$$

$$\cos \theta = \frac{1}{1.65}$$

$$\theta = \cos^{-1} \left(\frac{1}{1.65} \right)$$

$$\approx 52.69$$

$$\approx 52.7^\circ$$

52.69

Today's Homework Practice includes:

p. 274 # 1 – 8

(If any of these understandings are missing, get help ASAP!)

pp. 280-282 #1 – 12, 14 [18, 20]