Slide 1
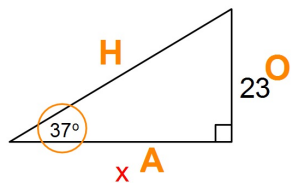
Tuesday, April 21, 2020

Ch 7 review:
- Right Δ Trigonometry
- The reciprocal trig functions

Slide 2

In right Δ trigonometry you can use SOHCAHTOA to find missing angles and sides.

Slide 3

Find the value of x to the nearest hundredth.

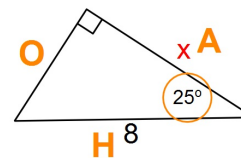SOHCAHTOA

H   O
     23

37°

x   A

$$Tan37° = \frac{23}{x}$$

x = 30.52

Slide 4

Find the value of x to the nearest hundredth.

SOHCAHTOA

O   x A

25°

H 8

$$8 \cdot Cos25° = \frac{x}{8} \cdot 8$$

x = 7.25

Find the value of x to the nearest hundredth.

7 **O**

SOHCAHTOA

$Sinx = \dfrac{7}{17}$

17 **H**

A

x
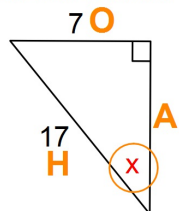
$x = Sin^{-1}\left(\dfrac{7}{17}\right)$

x = 24.32°

A tall tree is damaged in a storm so you tie a rope to the top and to an a stake in the ground to keep it from falling over. If the rope makes a 62° angle with the ground and the stake in the ground is 18 feet from the tree find the length of the rope to the nearest hundredth.

SOHCAHTOA

Rope x **H**

Ground 62°

18 ft **A**
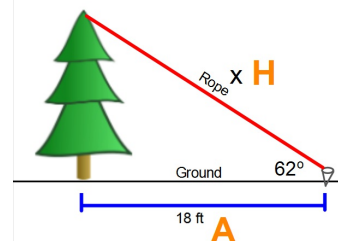
$Cos62° = \dfrac{18}{x}$

Rope: x = 38.34 ft.

Reciprocal Trig Functions

Secant   Cosecant   Cotangent

Abbreviations for the Reciprocal Trig Functions:

Secant ⟶ Sec

Cosecant ⟶ Csc

Cotangent ⟶ Cot

Secant: $sec\theta = \dfrac{1}{cos\theta} = \dfrac{Hyp}{Adj}$

Cosecant: $csc\theta = \dfrac{1}{sin\theta} = \dfrac{Hyp}{Opp}$

Cotangent: $Cot\theta = \dfrac{1}{Tan\theta} = \dfrac{Adj}{Opp}$

Use ΔJKL to find each as a ratio:

$\underline{\text{Sin}J} = \frac{13}{85}$ $\boxed{\text{Sec}J} = \frac{85}{84}$

$\boxed{\text{Cot}J} = \frac{84}{13}$

$\underline{\text{Cos}J} = \frac{84}{85}$

$\boxed{\text{Csc}J} = \frac{85}{13}$ $\underline{\text{Tan}J} = \frac{13}{84}$

K **13** L **O**

H **85**   **A** **84**

J
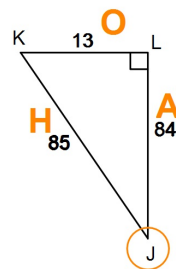
Use ΔEFG to find each as a ratio:

$\underline{\text{Cot}G} = \frac{63}{16}$ $\text{Tan}G = \frac{16}{63}$

$\underline{\text{Csc}G} = \frac{65}{16}$ $\text{Sin}G = \frac{16}{65}$

$\underline{\text{Sec}G} = \frac{65}{63}$ $\text{Cos}G = \frac{63}{65}$

E   **O** 16   63 **A**

F   **H** 65   G

1st: Use Pytagorean Thm to find the hypot:

$\text{hypot}^2 = 16^2 + 63^2$

$\text{hypot} = \sqrt{16^2 + 63^2} = 65$

You can now do Practice #19