

U2D2_T SOHCAHTOA sides

Monday, February 26, 2018 12:04 PM



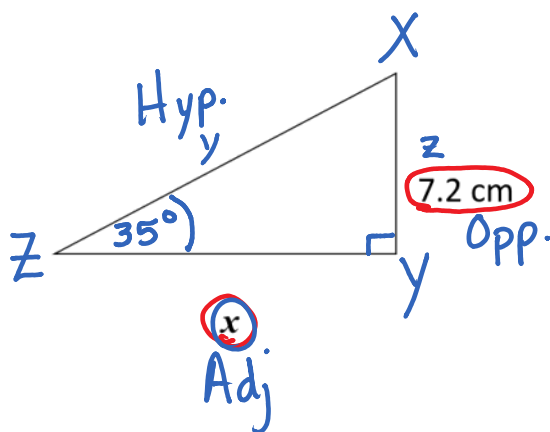
U2D2_T
SOHCAHT...

U2D2 Determining Lengths of Sides in Right Triangles

Example 1: Determine the length of side x , to the nearest tenth.

Given:

$$\Delta XYZ, z = 7.2 \text{ cm}, Z = 35^\circ, Y = 90^\circ$$



TOA
 $\tan Z = \frac{O}{A}$

$$\tan 35^\circ = \frac{7.2}{x}$$

$$(\tan 35^\circ)x = 7.2$$

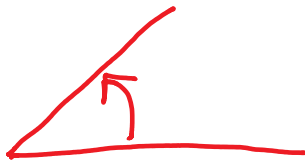
$$\frac{\tan 35^\circ x}{\tan 35^\circ} = \frac{7.2}{\tan 35^\circ}$$

$$x = 10.28\dots$$

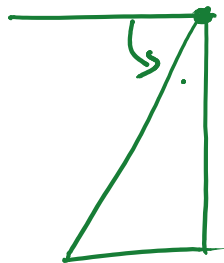
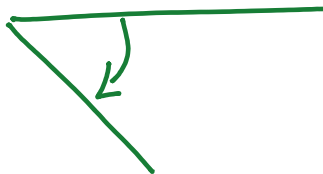
$$x \approx 10.3 \text{ cm}$$

Recall:

Angle of elevation/inclination is always measured UP from the HORIZONTAL.



Angle of depression always measured DOWN from the HORIZONTAL.



Example 2: Tanya is standing 7.92 m from the flagpole. She is holding a clinometer at eye level 1.6 m above the ground. How tall is the flagpole if she measures a 50° angle of elevation?

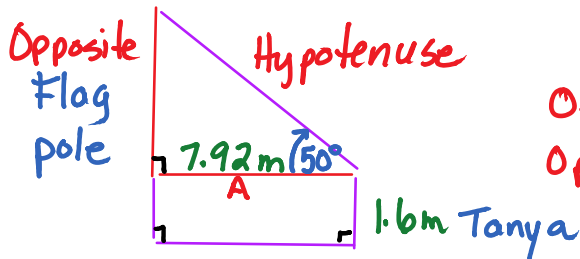
SOH CAH TOA

$$\tan 50^\circ = \frac{\text{Opp}}{7.92}$$

$$\text{Opp} = 7.92 \tan 50^\circ$$

$$\text{Opp} = 9.43 \dots$$

$$\text{Opp} \approx 9.4$$



\therefore the flag pole is $9.4\text{m} + 1.6\text{m} = 11.0\text{m}$ tall.

U2D2 Practice: Page 80 #1a, 2a, 3, 4, 9, 10, 12