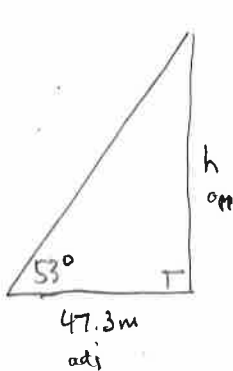


T-3 Trig Applications

Use trigonometry to solve each problem. Round missing sides to the nearest tenth, and angles to the nearest degree. Be sure to include a sketch, a trig equation, solving work, and you're your answer with units in a sentence.

1. Suppose you have been assigned to measure the height of a tall Ponderosa pine tree. From a point 47.3 meters from the base of the tree, you find that you must look up at an angle of 53° to see the top of the tree. How tall is the tree?



$$\text{TDA} \quad 47.3 \tan 53^\circ = \frac{h}{47.3} \cdot 47.3$$

$$47.3 \tan 53^\circ = h$$

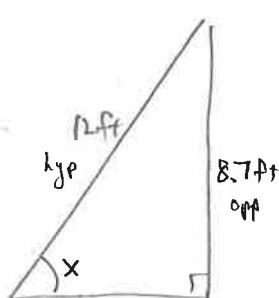
$$h = 62.769$$

$$h \approx 62.8$$

The tree is about 62.8m tall.

(5)

2. You lean a 12-foot ladder against a wall. If it reaches 8.7 feet up the wall, what angle does the ladder make with the ground?



$$\text{SOH} \quad \sin x = \frac{8.7}{12}$$

$$\sin x = .725$$

$$x = 46.468$$

$$x \approx 46^\circ$$

The ladder makes a 46° angle with the ground.

(5)