

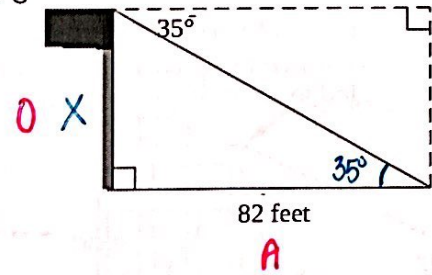
Day 9 – Applications of Right Triangle Trig – Practice

1. The angle of depression from the top of a flag pole to a point on the ground is 82 feet from the base of the flag pole, how tall is the pole?

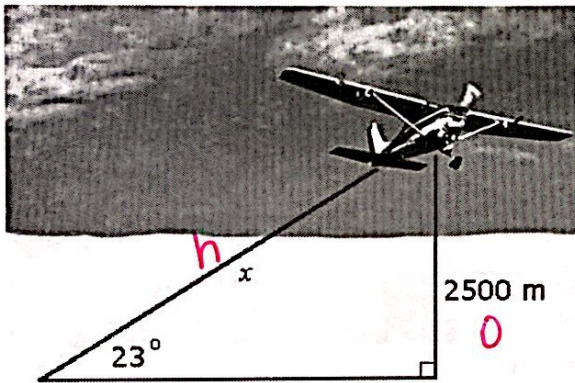
$$\frac{\tan 35^\circ}{1} = \frac{x}{82}$$

$$x = 82 \cdot \tan 35$$

$$x = 57.4 \text{ ft}$$



2. The angle of elevation of an airplane is 23°. If the airplane's altitude is 2500 m, how far away is it?

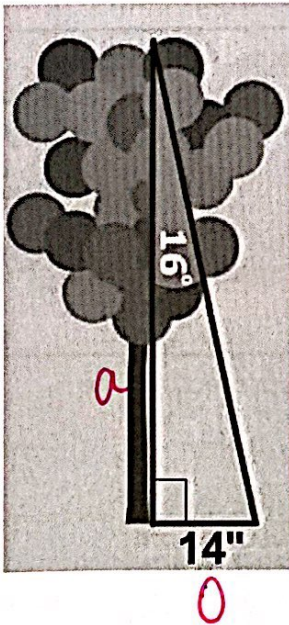


$$\frac{\sin 23}{1} = \frac{2500}{x}$$

$$\frac{x \cdot \sin 23}{\sin 23} = \frac{2500}{\sin 23}$$

$$x = 6398 \text{ m}$$

3. What is the height of the tree?

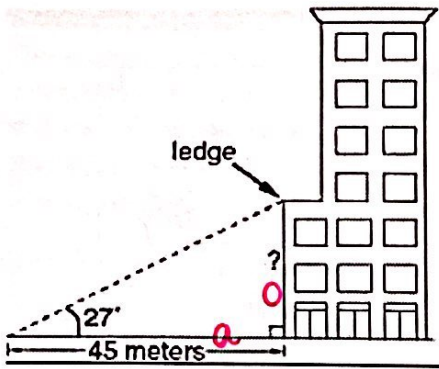


$$\frac{\tan 16}{1} = \frac{14}{x}$$

$$\frac{x \cdot \tan 16}{\tan 16} = \frac{14}{\tan 16}$$

$$x = 48.8 \text{ ft}$$

4. A company is planning on getting a mural painted on the side of their building. They are trying to determine the height of the wall from the ground to the ledge. Given the following determine ^{the} height.

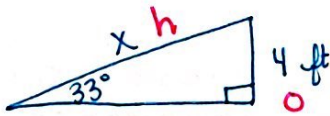


$$\frac{\tan 27^\circ}{1} = \frac{x}{45}$$

$$x = 45 \cdot \tan 27^\circ$$

$$x = 22.9 \text{ m}$$

5. A ramp to a building has a height of 4 feet and the angle of elevation is 33° . How long is the ramp?



$$\frac{\sin 33^\circ}{1} = \frac{4}{x}$$

$$x \cdot \sin 33^\circ = 4$$

$$x = \frac{4}{\sin 33^\circ} = 7.3 \text{ ft}$$

6. If a kite is 40 feet off the ground and the string holding the kite is 42 feet long, what is the angle of elevation to the kite?

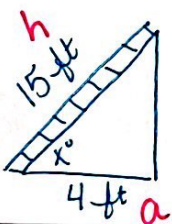


$$\sin x = \frac{40}{42}$$

$$x = \sin^{-1}\left(\frac{40}{42}\right)$$

$$x = 70.2^\circ$$

7. A 15-foot ladder is leaned against a house. If the base of the ladder is 4 feet from the house, what angle does the ladder make with the ground?

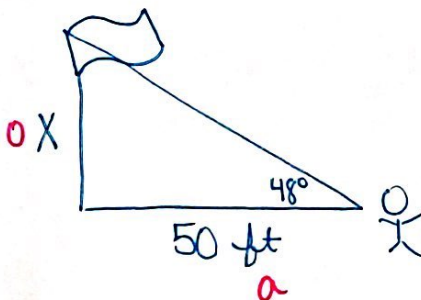


$$\cos x = \frac{4}{15}$$

$$x = \cos^{-1}\left(\frac{4}{15}\right)$$

$$x = 74.5^\circ$$

8. A flagpole stands in the middle of a flat, level field. Fifty feet away from its base a surveyor measures the angle to the top of the flagpole as 48° . How tall is the flagpole?



$$\frac{\tan 48^\circ}{1} = \frac{x}{50}$$

$$x = 50 \cdot \tan 48^\circ$$

$$x = 55.5 \text{ ft}$$