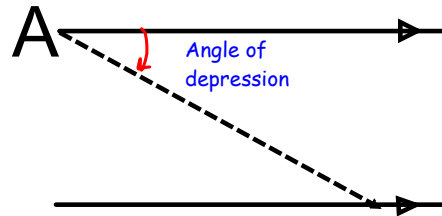
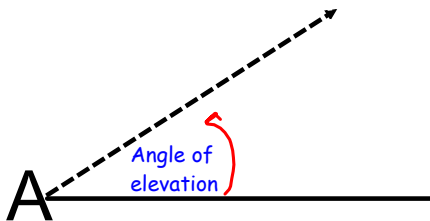


Unit 6 Day 2 Angles of elevation and depression

Angle of elevation - The angle between the horizontal line and the line of sight **above** the horizontal line.

Angle of depression - The angle between the horizontal line and the line of sight **below** the horizontal line.



Mar 16-1:03 PM

(SAT problem)

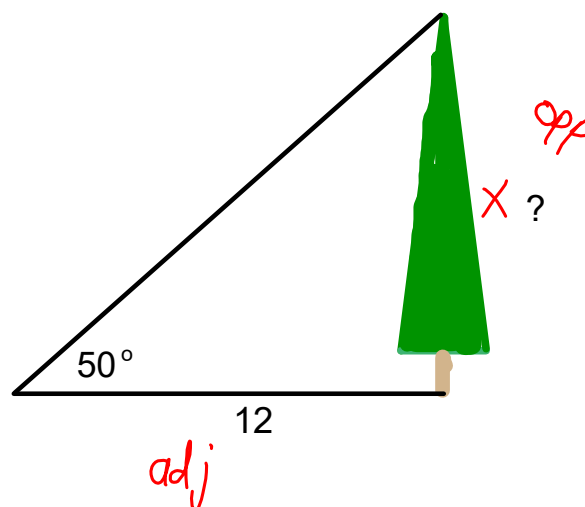
A pine tree casts a 12-meter shadow on level ground, as shown below. The angle of elevation from the tip of the shadow to the top of the tree is 50° . To the nearest tenth of a meter, what is the height of the pine tree?

$$\tan(50) = \frac{x}{12}$$

$$12 \cdot \tan(50) = x$$

- A. 7.7
- B. 9.2
- C. 10.1
- D. 12.0
- E. 14.3**

$$14.3 = x$$

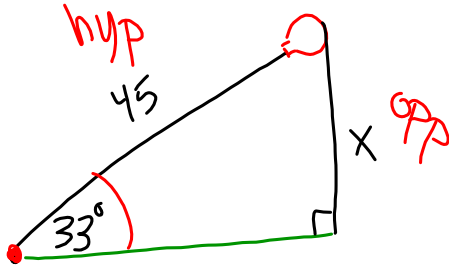


Apr 13-8:25 AM

Example 1

A balloon on a string is staked to the ground. The wind is blowing so an angle of elevation of 33° is formed with the ground. If the length of the string and balloon is 45 feet total, how high from the ground is the balloon?

1. Draw a right triangle
2. Fill in the information
3. Solve for the triangle



$$\sin(33) = \frac{x}{45}$$

$$45 \cdot \sin(33) = x$$

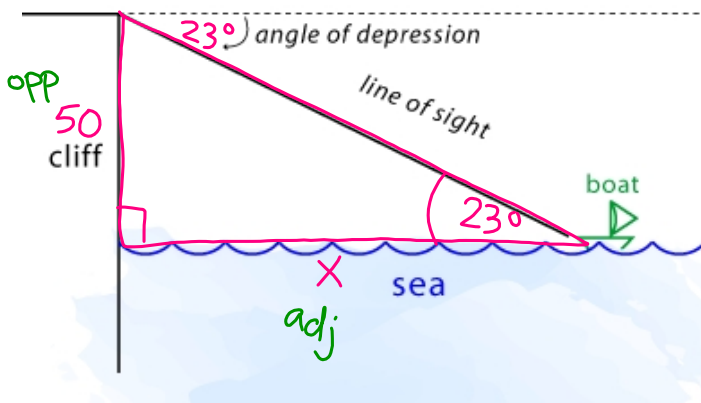
$$24.5 \text{ ft.} = x$$

Apr 17-11:42 PM

Example 2

A boat is spotted near a cliff. The angle of depression from the top of the cliff to the boat is 23 degrees. The cliff is 50 feet above sea level. How far away is the boat from the bottom of the cliff?

1. Draw a right triangle
2. Fill in the information
3. Solve for the triangle



$$\tan(23) = \frac{50}{x}$$

$$x = \frac{50}{\tan(23)}$$

$$x = 117.8 \text{ ft.}$$

Apr 17-11:42 PM