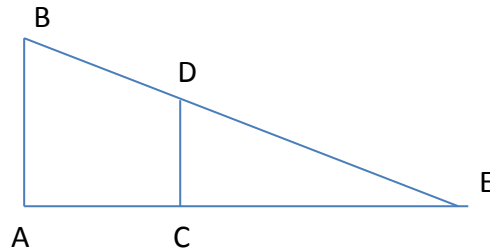


## Answer on Question #57924 - Math – Trigonometry

**Task 1.** Fill in the blank.

The light from a lamppost casts a shadow of a man who is standing 15 feet away from the lamppost. The man's shadow is 5 feet long. The angle of elevation from the tip of the shadow to the lamp is 50 degrees. To the nearest foot, the lamppost is \_\_\_\_\_ feet tall.

**Solution.**



$AB$  – the lamppost;

$CD$  – the man;

$CE$  – the shadow of the man;

So,  $AC = 15$  feet,  $CE = 5$  feet,  $\angle AEB = 50^\circ$ .

$AE = AC + CE = 15 + 5 = 20$  feet.

$ABE$  – a right triangle.

Using the definition of Tangent:

$$\tan \angle AEB = \frac{AB}{AE}$$

Therefore:

$$AB = AE \cdot \tan \angle AEB$$

So,

$AB = 20 \cdot \tan 50^\circ \approx 24.27 \approx 24$  feet.

**Answer:** 24 feet.

**Task 2.** The Pythagorean theorem is true for all similar triangles

A: True

B: False

**Solution.**

We can use the Pythagorean theorem only for all right triangles.

**Answer:** B: False.