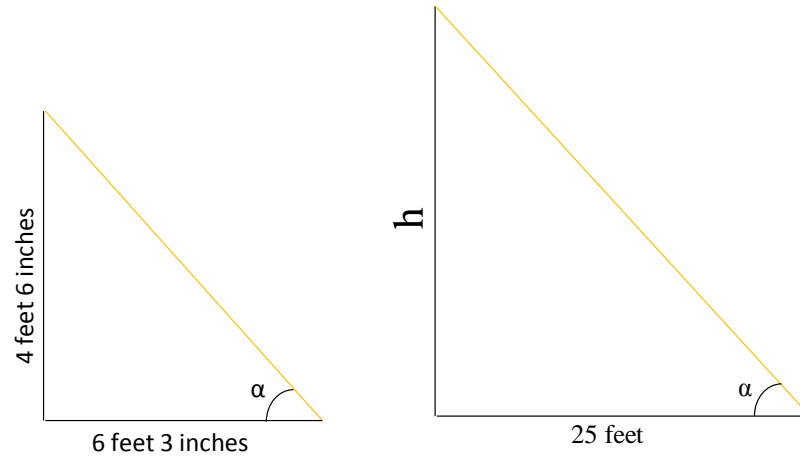


**Problem:**

The length of an objects shadow varies directly with its height. A boy who is 4 feet 6 inches tall casts a shadow that is 6 feet 3 inches long. What is the height of a tree that casts a shadow that is 25 feet long?

**Solution:**



According to the figures above:

$$\operatorname{tg}\alpha = \frac{4 \text{ feet } 6 \text{ inches}}{6 \text{ feet } 3 \text{ inches}} = \frac{4.5 \text{ feet}}{6.25 \text{ feet}} = \frac{h}{25 \text{ feet}}$$

Thus

$$h = \frac{25 * 4.5}{6.25} = 18 \text{ feet}$$

**Answer:** height of a tree is  $h = 18 \text{ feet}$ .