Name:

Date:

PBS online

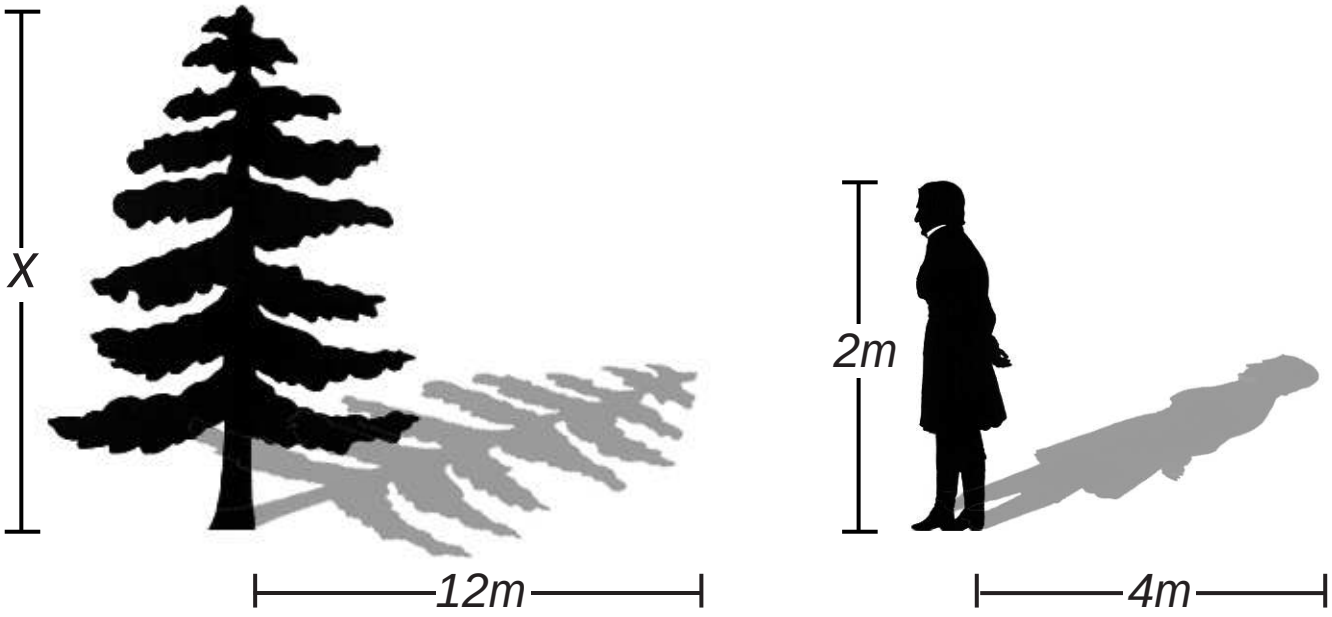
LEWIS & CLARK

Lesson 10

Using Proportion to Find Height

A proportion comparing two shadow lengths to two heights will always be equal.

The two objects and their shadows form similar triangles. The matching sides of similar triangles have equal ratios, therefore this information can be used to find the height of an unknown.



$$\frac{\text{man's shadow}}{\text{tree shadow}} = \frac{\text{man's height}}{\text{tree height}}$$

$$\frac{4}{12} = \frac{2}{x}$$

$$4x = 2 \cdot 12$$

$$\frac{4x}{4} = \frac{24}{4}$$

$$x = 6$$

The tree is 6m tall