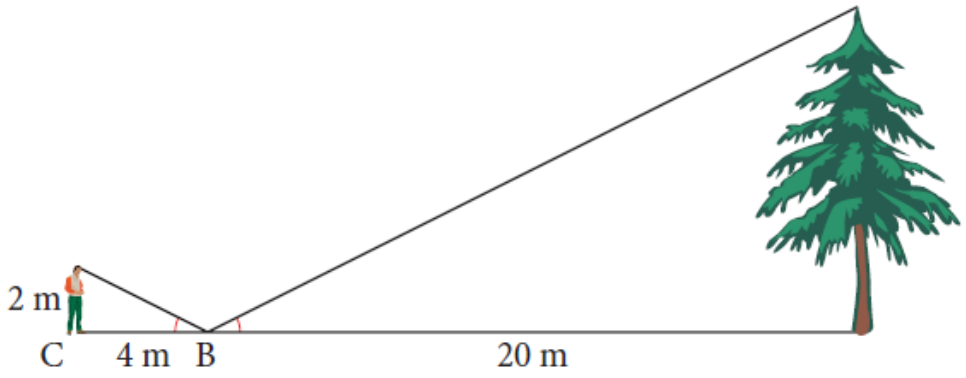
SIMILAR TRIANGLES

6. A hiker, whose eye level is 2 m above the ground, wants to find the height of a tree. He places a mirror horizontally on the ground 20 m from the base of the tree, and finds that if he stands at a point C, which is 4 m from the mirror B, he can see the reflection of the top of the tree. How tall is the tree?



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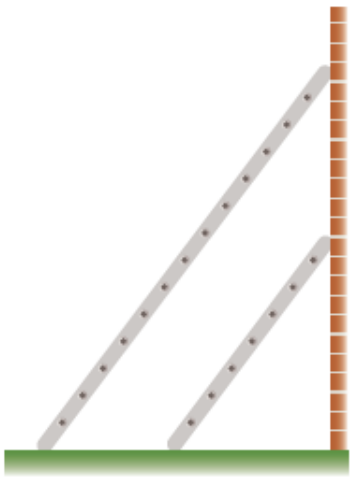
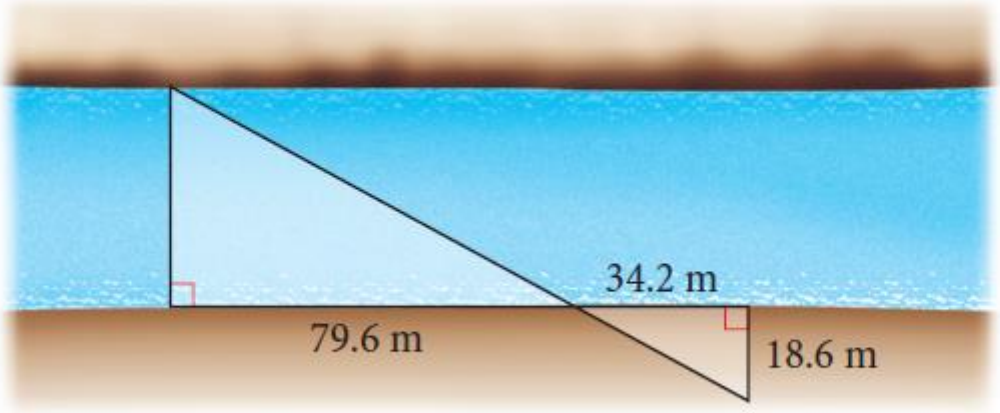
7. Two ladders are leaned against a wall so that they make the same angle with the ground. The 10' ladder reaches 8' up the wall. How much further up the wall does the 18' ladder reach?



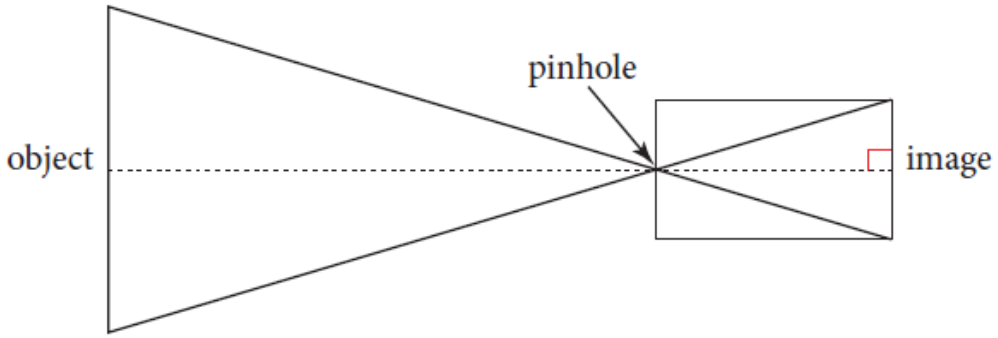
8. At a certain time of the day, the shadow of your friend who is 5 ft tall measures 8 ft. At the same time, the shadow of a tree measures 28 ft. Draw a diagram to represent the situation. How tall is the tree?

9. To find the height of a tree, Darren measures the shadow of a metre stick to be 90 cm and the shadow of the tree to be 3.2 m. Draw a diagram to represent the situation. How tall is the tree?

10. To find the width of a river, Jordan surveys the area and finds the following measures. Find the width of the river.



11. Light travels in a straight line. The pinhole camera, or camera obscura, makes use of this fact. When rays of light reflect off an object, and pass through the pinhole in a camera, they cross and form an upside-down image.



An object is 3.6 m from the pinhole. Its image is 4.2 cm from the opposite side of the pinhole. The height of the image is 0.8 cm. What is the height of the object?