

8.2: INDIRECT MEASUREMENT

Find the value of 'x' in each of the following.

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| <p>1. $x =$ _____</p> | |
| <p>2. $x =$ _____</p> | |

Sketch a picture and solve.

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| <p>3. _____</p> | <p>A 6 – foot ladder touches the side of a building at a point 5 feet above the ground. At what height would a 15 – foot ladder touch the building if it makes the same angle with the ground as the shorter ladder?</p> |
| <p>4. _____</p> | <p>Mark wants to cut a triangular patch to make an emblem. The pattern for the emblem is a triangle with sides 8, 8, and 10 centimeters long. If Mark wants to make the longest side of the emblem 25 centimeters, how long should the other two sides be?</p> |
| <p>5. _____</p> | <p>A flagpole casts a shadow 3.5 meters long. Anita is standing near the pole. Her shadow is 0.75 meters long. Anita’s height is 1.5 meters. How tall is the flagpole?</p> |

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| 6. _____ | Mrs. Krauss is 5 feet 6 inches tall. She notices that her shadow is 3 feet long and the shadow of a nearby water tower is 75 feet long. Mrs. Krauss would like to know the height of the water tower. |
| 7. _____ | On a map, the length from Cleveland to New York is 7 cm, from Cleveland to Atlanta is 10 cm, and from New York to Atlanta is 13 cm. If on a larger map the length from Cleveland to New York is 17.5 cm, what are the other lengths? |
| 8. _____ | A painter needs to know the height of a building to estimate the amount of paint needed for the front side. When the building cast an 18 ft shadow, the 6 ft tall painter casts a 3 ft long shadow. How tall is the building? |
| 9. _____ | Each time Old Faithful in Yellowstone National Park erupts, rangers can estimate the height of the geyser by comparing it to the height of a tree. First the rangers locate a tree of the same height. The shadow of the tree is 93 ft at the same time that the shadow of a 6 ft ranger is 4 ft. Find the height of the tree to the nearest foot. |
| 10. _____ | To find the height of a tree, Wyatt places a mirror so that he can see the top of the tree in the mirror. The mirror is 3 ft from him and 7.5 ft from the tree. If Wyatt is 5.5 ft tall, how tall is the tree? |