

NAME \_\_\_\_\_ DATE \_\_\_\_\_ PER. \_\_\_\_\_

**INDIRECT MEASUREMENT**

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

<p>1. <math>x =</math> _____</p>	
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<p>2. <math>x =</math> _____</p>	
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**Sketch a picture and solve.**

<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>
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<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>
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5. _____	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?
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. _____	Charlie walks away from a tree along its shadow until his head is in line with the top of the tree's shadow. Charlie is standing 15 feet from the base of the tree and 6 feet from the end of the shadow. Charlie is 5 feet tall. What is the height of the tree?
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**Review Problems**

10. _____	Solve the following proportion: $\frac{2x}{10} = \frac{35}{25}$
11. _____	A recipe for salad dressing calls for oil and vinegar in a ratio of 5 parts oil to 2 parts vinegar. If you use $1\frac{1}{4}$ cups of oil, how many cups of vinegar will you need?
12. _____	Tell whether the following statement is sometimes, always, or never true.  Two equilateral triangles are similar.