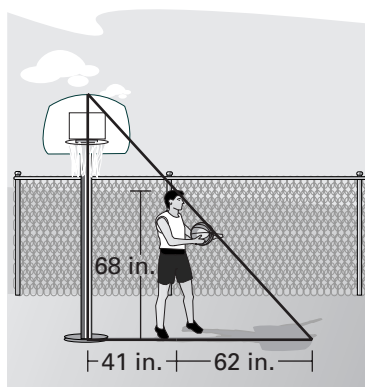


Real-Life Application: When Will I Ever Use This?

For use with pages 488–496

Backyard Basketball

You want to put up a basketball hoop in your backyard. Regulation height for the basketball hoop is 10 feet or 120 inches. After a couple of attempts at guessing the correct height and checking, you decide to use shadows to estimate the height. You are 68 inches tall, and your shadow is 62 inches long. You are standing 41 inches from the pole and the tip of your shadow coincides with the tip of the basketball hoop's shadow as shown in the diagram below.



1. From the illustration, draw a diagram that describes the situation and label the given lengths of the corresponding sides using an x for the height of the basketball hoop.
2. Are the triangles similar? If so, state the postulate or theorem that justifies your answer.
3. How high did you hang the goal? Round to the nearest inch.
4. Is the basketball hoop currently at regulation height?
5. You put a stick in the ground to mark where the shadow of the basketball hoop should be and adjust the height of the hoop until the rim's shadow is on the stick. How far away from the base of the pole should you put the stick? Round to the nearest inch.