Name:
Date: $\qquad$ Period:
Unit 7 Project: Indirect Measurement

## Standard

B.A.REI.A. 1 Build functions and write expressions, equations, and inequalities for common algebra settings leading to a solution in context (e.g., rate and distance problems and problems that can be solved using proportions).

## Part 1 Directions

For each situation, complete the following:
a. Draw a diagram that represents the situation. (5 points)
b. Set up an equation that represents the situation. (5 points)
c. Solve your equation. (8 points)
d. State your answer in the context of each situation and be sure to include your units. (2 points)

1. Chuy is 6 feet tall and casts a 15 -foot shadow. At the same time, Diane casts a 10 -foot shadow. How tall is Diane?
2. A 42-foot flagpole near the Washington Monument casts a shadow that is 14 feet long. At the same time, the Washington Monument casts a shadow that is 185 feet long. How tall is the Washington Monument?
3. A ramp slopes upward from the sidewalk to the entrance of a building at a constant incline. If the ramp is 2 feet high when it is 5 feet from the sidewalk, how high is the ramp when it is 7 feet from the sidewalk?
4. The floorplan of a house is drawn to a scale of $1 \mathrm{in} .: 5 \mathrm{ft}$. The actual dimensions of the family room are 20 feet by 24 feet. Assume the family room is a rectangle. What are the dimensions of the family room on the floorplan?

## Part 2 Directions

5. Make your own word problem in which you would need to use indirect measurement.
a. Create a well-constructed word problem in paragraph form that includes all pertinent information. (12 points)
b. Construct a diagram illustrating the situation. (3 points)
c. Provide the answer key for your problem. It should include an equation (proportion), solving steps and the answer with units. (5 points)
