

PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** November 5 to November 9**DAY:** Thursday

RISD Objective: Given a problem which reflects proportional reasoning, students will write a proportion which models the situation and solve it.

PROBLEM #56

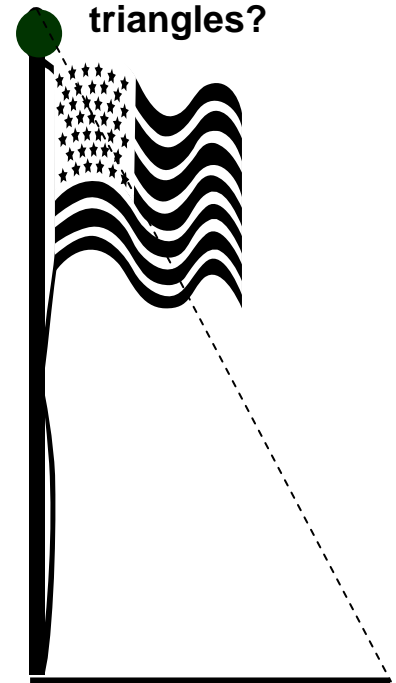
Roger wants to find the height of the flagpole. Roger is 5 feet 6 inches tall and casts a shadow about 3 feet long. The flagpole casts a shadow about 11 feet long. Use this information to help Roger find the approximate height of the flagpole.

1) Are the triangles similar? How do you know?

2) What is true about the sides of similar

3) What proportion can be used to find the height of the flagpole?

4) Find the height of the flagpole.



MODEL SOLUTION #56

1. Yes, the corresponding angles of the small triangle are the same size as the angles of the large triangle.

2. Corresponding sides of similar triangles are proportional.

3.
$$\frac{\text{Roger's_height}}{\text{flagpole_height}} = \frac{\text{Roger's_shadow}}{\text{flagpole_shadow}}$$

4.
$$\frac{5.5}{x} = \frac{3}{11}$$

$$3x = (5.5)(11)$$

$$3x = 60.5$$

$$x = 20.17 \text{ feet}$$

$$20 \text{ feet } 2 \text{ inches}$$

The flagpole is about 20 feet 2 inches tall.