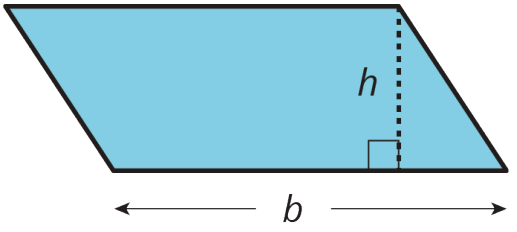
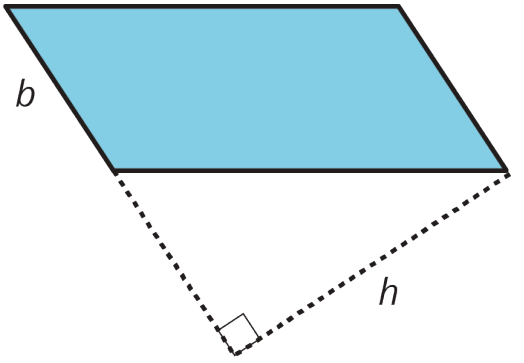
Unit 1 Lesson 6: From Parallelograms to Triangles

1 Same Parallelograms, Different Bases (Warm up)

Student Task Statement

Here are two copies of a parallelogram. Each copy has one side labeled as the base b and a segment drawn for its corresponding height and labeled h.





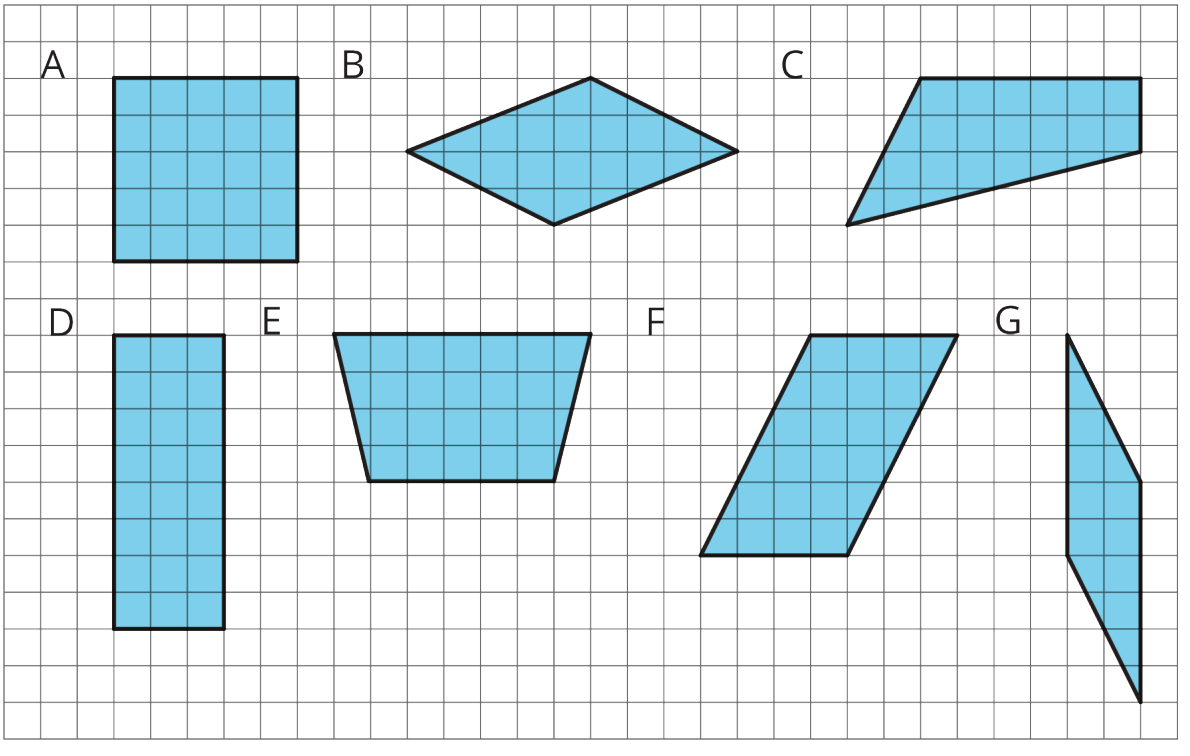
1. The base of the parallelogram on the left is 2.4 centimeters; its corresponding height is 1 centimeter. Find its area in square centimeters.
2. The height of the parallelogram on the right is 2 centimeters. How long is the base of that parallelogram? Explain your reasoning.

2 A Tale of Two Triangles (Part 1)

Student Task Statement

Two polygons are identical if they match up exactly when placed one on top of the other.

1. Draw *one* line to decompose each polygon into two identical triangles, if possible. Use a straightedge to draw your line.



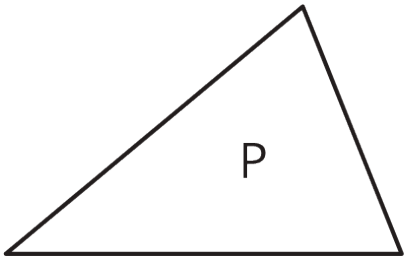
2. Which quadrilaterals can be decomposed into two identical triangles?

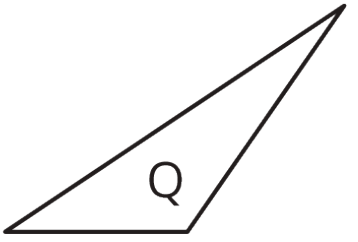
   Pause here for a small-group discussion.

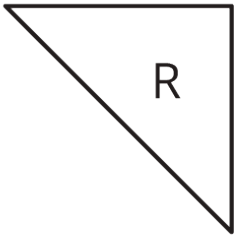
3. Study the quadrilaterals that can, in fact, be decomposed into two identical triangles. What do you notice about them? Write a couple of observations about what these quadrilaterals have in common.

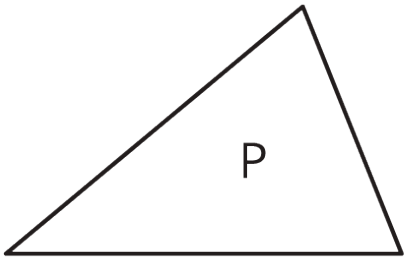
3 A Tale of Two Triangles (Part 2)

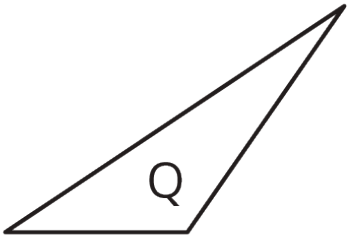
Images for Launch

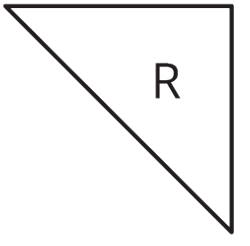


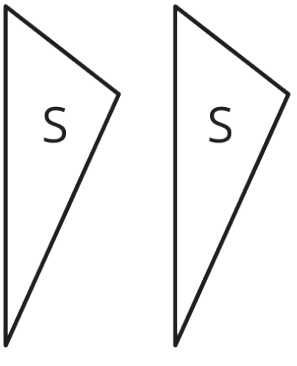


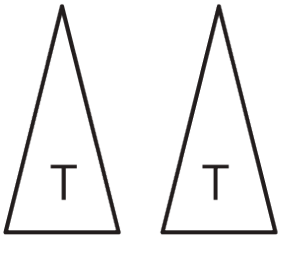


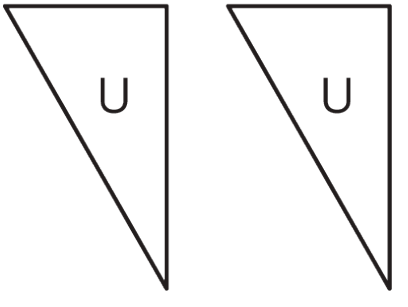












Student Task Statement

Your teacher will give your group several pairs of triangles. Each group member should take 1 or 2 pairs.

1. a. Which pair(s) of triangles do you have?

   b. Can each pair be composed into a rectangle? A parallelogram?

2. Discuss with your group your responses to the first question. Then, complete each statement with *All*, *Some*, or *None*. Sketch 1 or 2 examples to illustrate each completed statement.

   a. _____ of these pairs of identical triangles can be composed into a *rectangle*.

b. _____ of these pairs of identical triangles can be composed into a *parallelogram*.