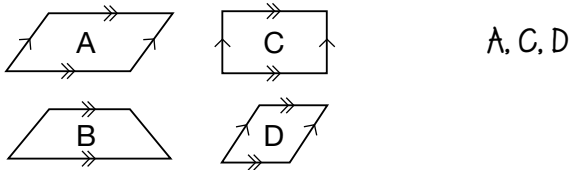


Classifying Quadrilaterals

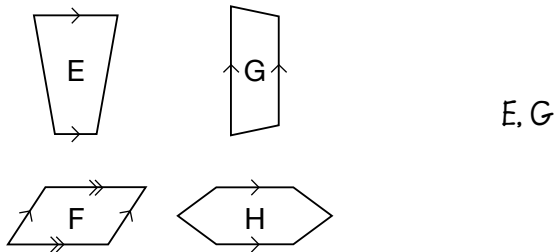
Goal Identify and sort quadrilaterals.

1. Which of these are parallelograms?



A, C, D

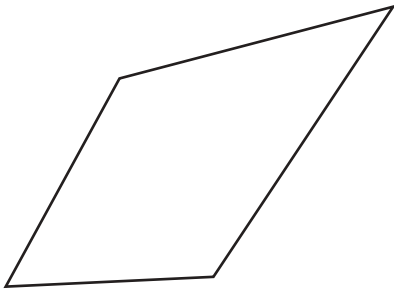
2. Which of these are trapezoids?



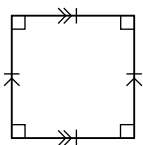
E, G

3. Draw a quadrilateral that is not a parallelogram or a trapezoid.

Answers will vary. For example:



4. Draw a square. What other shape names can be used to describe a square?

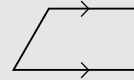


a parallelogram, a rectangle, a rhombus

At-Home Help

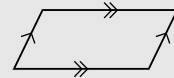
A quadrilateral is a closed shape with 4 straight sides.

A **trapezoid** has exactly 1 pair of parallel sides.

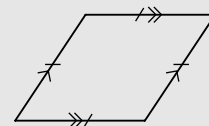
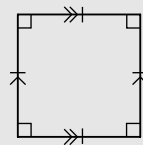


> or >> indicates parallel sides.

A **parallelogram** has 2 pairs of parallel sides.



A rectangle, a square, and a rhombus are special parallelograms.



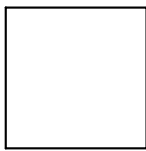
| and || indicate equal sides.

Building Quadrilaterals

Goal Relate properties of quadrilaterals to their side lengths.

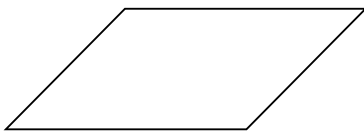
1. Use straws or toothpicks to make these shapes. Draw a picture of each shape. What type of quadrilateral is each shape?

- a) a quadrilateral with 4 equal sides and square corners



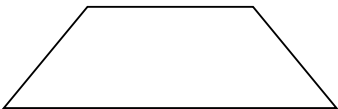
a square

- b) a quadrilateral with 2 equal long sides and 2 equal short sides, but no square corners



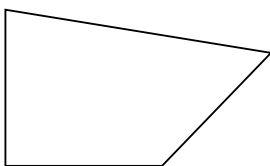
a parallelogram

- c) a quadrilateral with no equal sides, but 1 pair of parallel sides



a trapezoid

- d) a quadrilateral with 3 equal sides, but no parallel sides



a quadrilateral

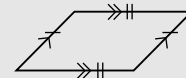
At-Home Help

Quadrilaterals can have 4, 3, 2, or no equal side lengths.



This shape has 3 equal side lengths.

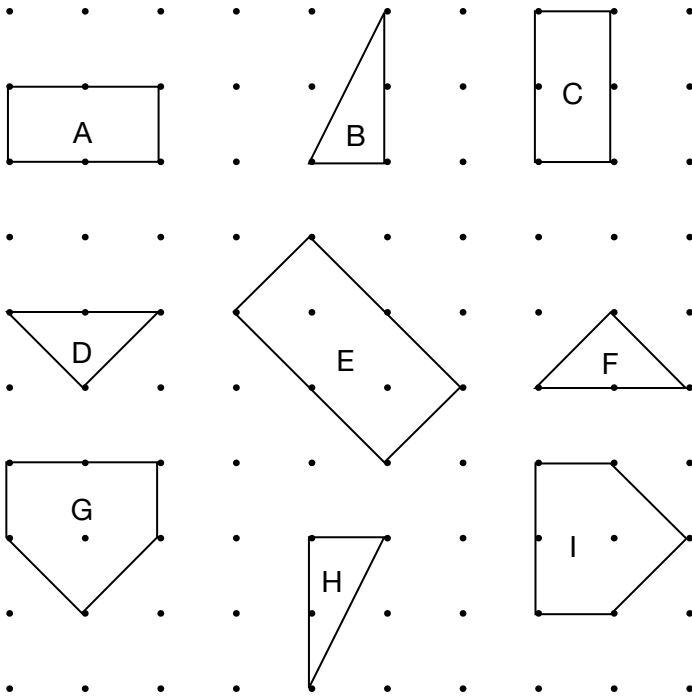
Parallelograms have 2 pairs of equal side lengths.



Congruent Shapes

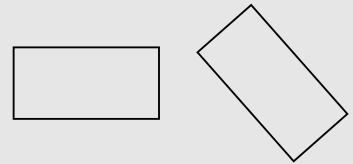
Goal Identify and construct congruent shapes.

1. Which shapes are congruent?



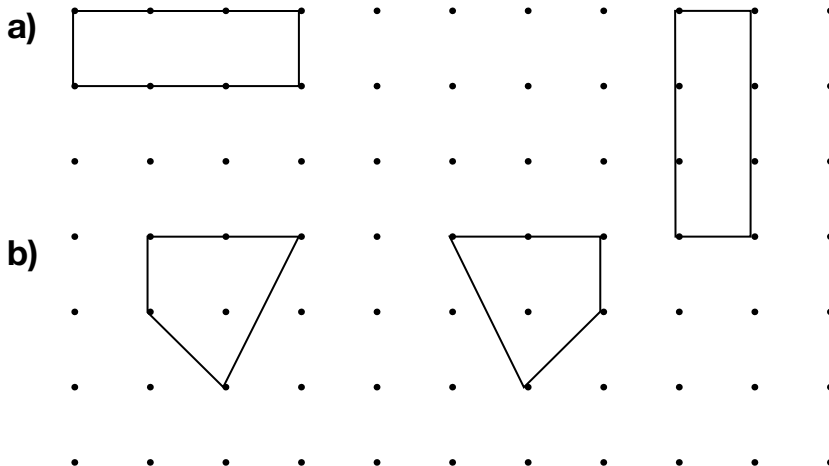
At-Home Help

2 shapes are **congruent** if they are identical in size and shape.



- A and C
- B and H
- D and F
- G and I

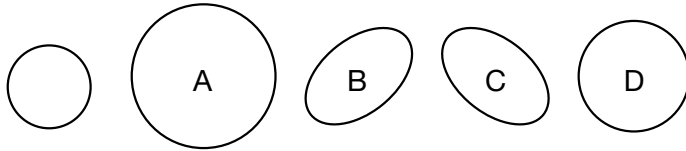
2. Construct a shape congruent to each shape on the grid, using the given line as one side.



Similar Shapes

Goal Identify and describe similar shapes.

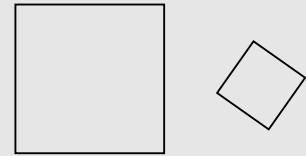
1. Which shapes look similar to the first shape? Explain.



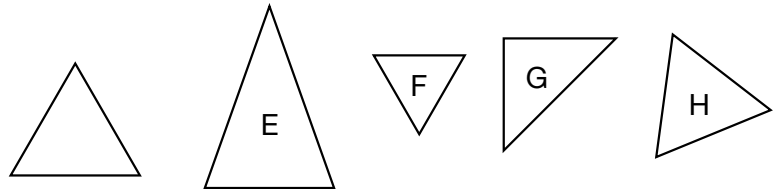
A and D. They are also circles.

At-Home Help

2 shapes are **similar** if they are identical in shape, but not necessarily in size.

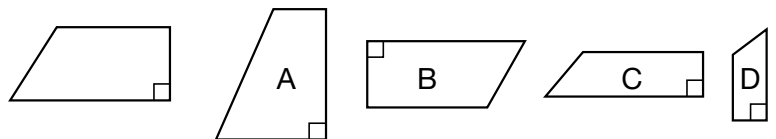


2. Which shapes look similar to the first shape? Explain.



F and H. They look like they to have 3 equal sides and 3 equal angles like the first triangle.

3. Which shapes look similar to the first shape? Explain.



B and D. A is too tall and C is too long.

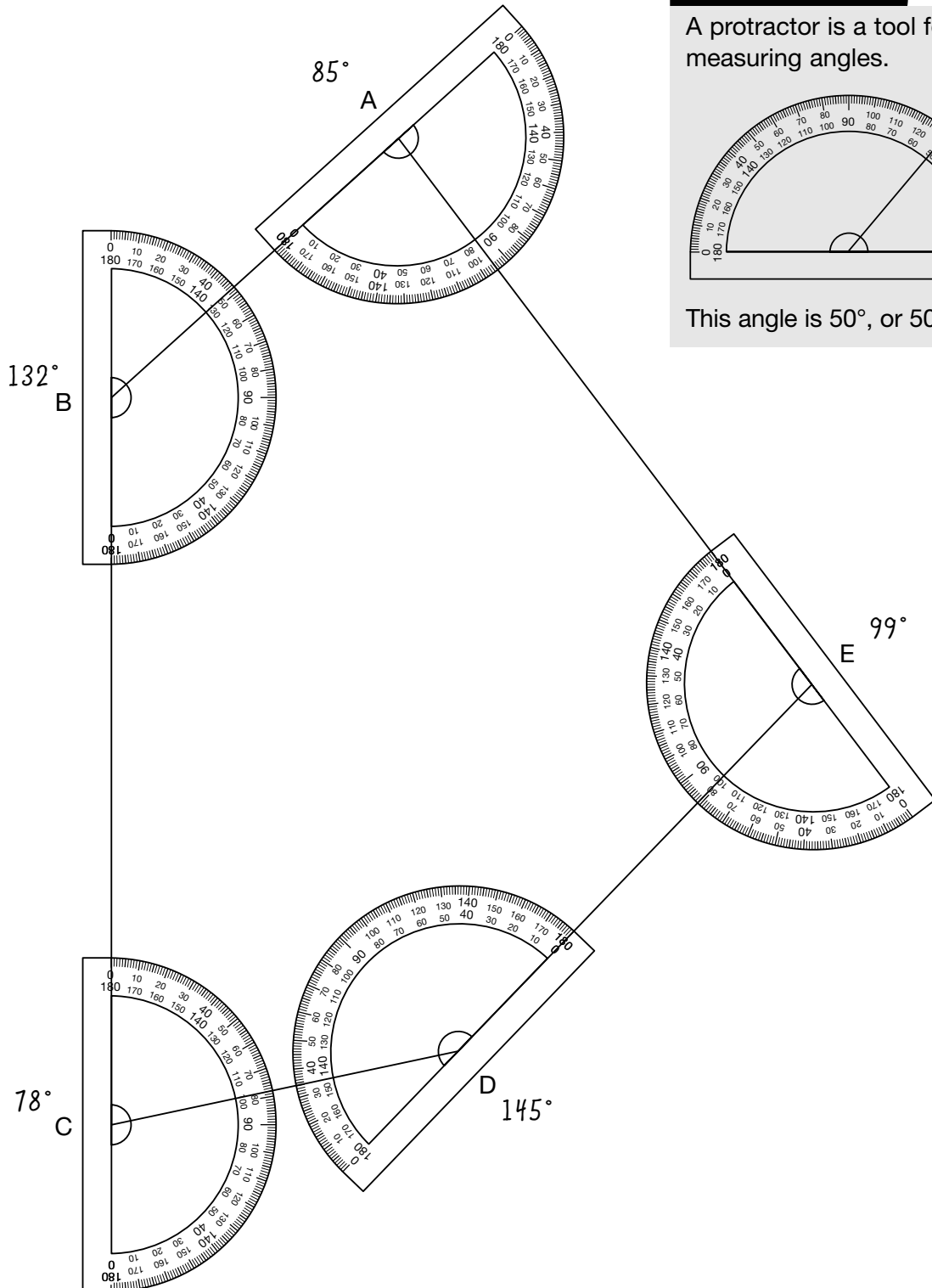
4. Janice says that congruent shapes are special similar shapes. Do you agree? Why or why not?

Yes, congruent shapes are similar shapes that happen to have the same size.

Measuring Angles

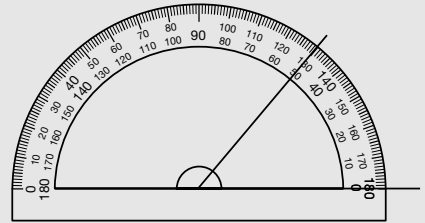
Goal Measure angles using a protractor.

1. How many degrees is each angle?



At-Home Help

A protractor is a tool for measuring angles.



This angle is 50° , or 50 degrees.

Solve Problems by Acting Them Out

Goal Act out a problem to solve it.

Trace this square and cut out the square you drew.



Cut out as many squares as you need to answer the questions below.

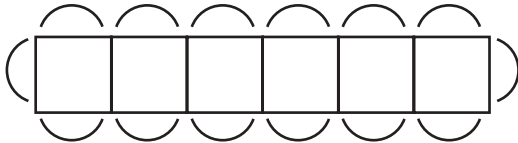
At-Home Help

A useful problem-solving strategy is to **act out** a problem. Sometimes you may need to substitute other objects for the ones in the problem. (See Question 1.)

- 6 square tables are arranged to make 1 long narrow table. 1 person sits on each outside edge of a square table. How many people can sit at the long table?

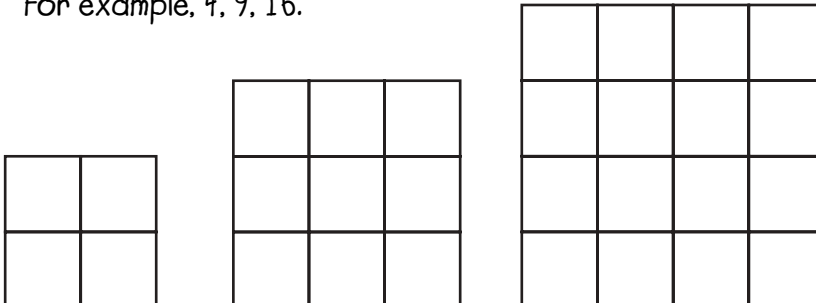
Sketch your answer after you act it out.

14 people



- How many squares does it take to make a bigger square? Find more than one answer. Sketch your answers after you act them out.

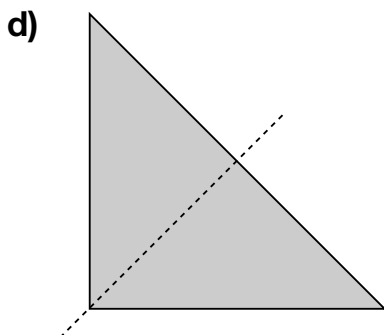
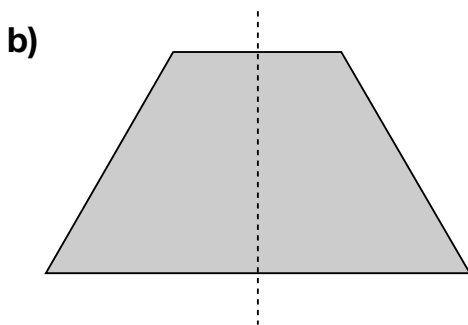
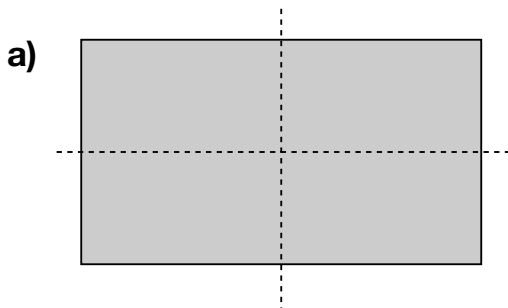
For example, 4, 9, 16.



Lines of Symmetry

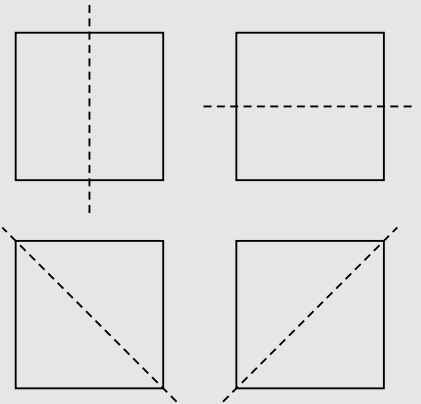
Goal Draw lines of symmetry.

1. Trace each shape and cut out the shape you drew. Fold it to find a line of symmetry. Unfold it. Repeat to find other lines of symmetry. On this page, draw all the lines of symmetry that you found for each shape.

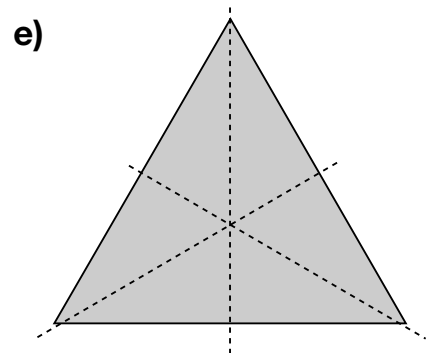


At-Home Help

A **line of symmetry** is a line that divides a shape in half so if you fold the shape along the line, the halves match.



A square has 4 lines of symmetry.

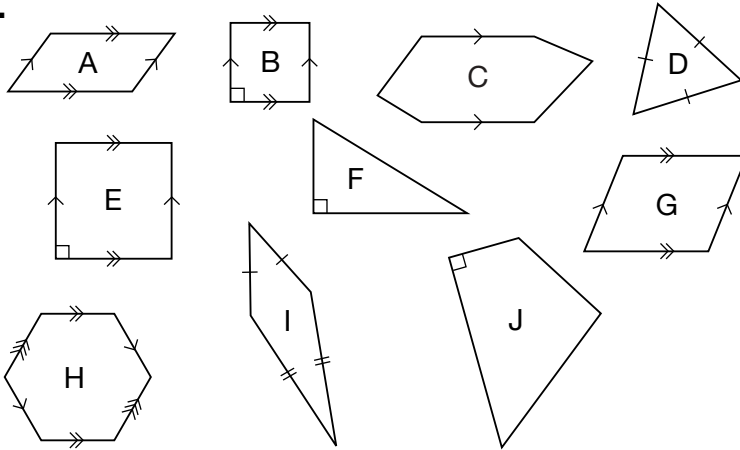


2. Which of the shapes in Question 1 has the most lines of symmetry?
How many? _____ The shape in part d), 3

Classifying 2-D Shapes

Goal Identify and sort 2-D shapes.

1.



At-Home Help

2-D shapes can be sorted, or classified, in many different ways. Some of the things you can consider are

- the number of sides
- whether any sides are equal in length
- whether the shapes are congruent
- whether there are any parallel sides
- whether there are square corners
- whether the shape has symmetry

a) Which shapes have parallel sides?

A, B, C, E, G, and H

b) Which shapes are similar?

B and E

c) Which shapes have symmetry?

B, D, E, G, H, and I

2. Describe another way to sort the shapes in Question 1.

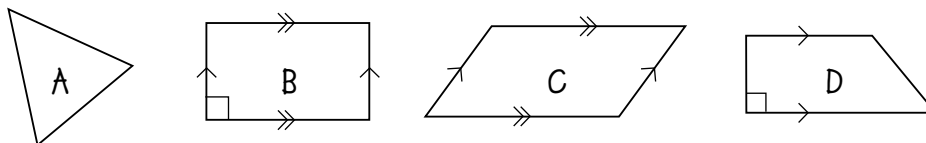
Which shapes belong?

For example, shapes that have 6 sides: C and H.

Shapes that have at least 1 right corner: B, E, F, and J.

3. Draw 4 shapes of your own and show 2 ways to sort them.

For example:

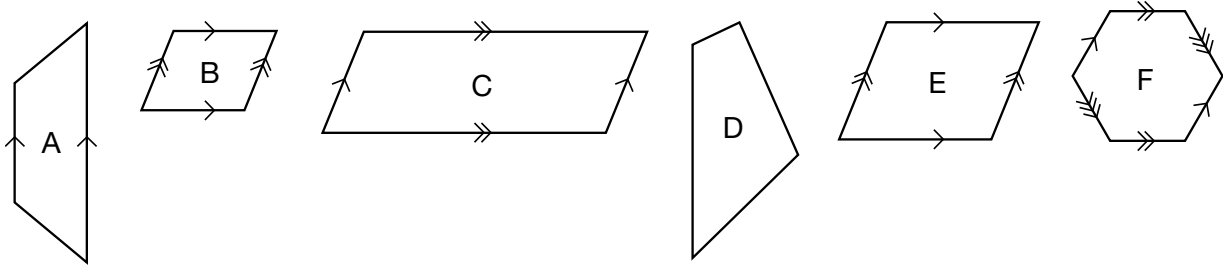


Shapes that have 4 sides or more are quadrilaterals: B, C, and D.

Shapes that have at least 1 square corner: B and D.

Test Yourself

Circle the correct answer.



1. What type of shape is shape D?

- A.** a quadrilateral **B.** a trapezoid **C.** a rhombus **D.** a parallelogram

2. Which shape has more than 2 lines of symmetry?

- E.** shape A **F.** shape F **G.** shape C **H.** shape E

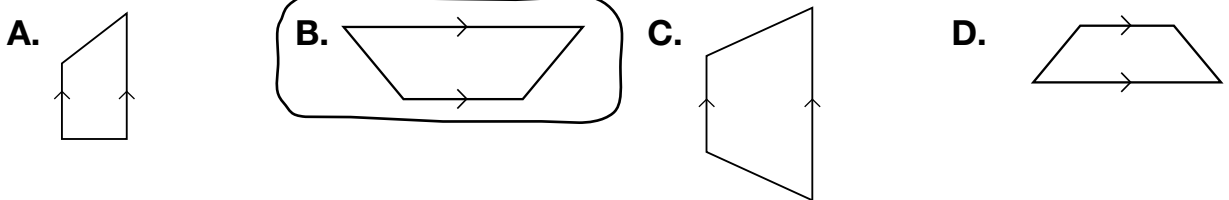
3. Which shape has no parallel sides?

- A.** shape D **B.** shape E **C.** shape B **D.** shape A

4. Which shape is similar to shape E?

- E.** shape F **F.** shape B **G.** shape C **H.** shape A

5. Which of these shapes is congruent to shape A?



6. Which of these shape names is **not** another way of describing a square?

- E.** a rectangle **F.** a trapezoid **G.** a parallelogram **H.** a quadrilateral

7. What is the measure of the angle shown?

- A.** 30° **C.** 145°
B. 35° **D.** 150°

