

Student Guide

Classifying Shapes

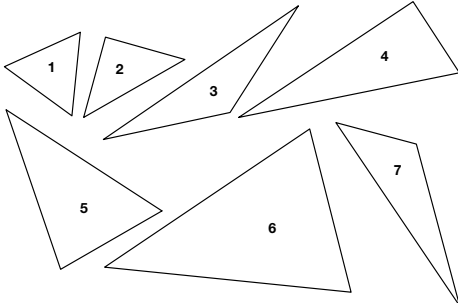
Questions 1–10 (SG pp. 422–424)

1. 1
2. 3
3. 4
4. 5
5. 7
6. 2
7. 6, 1
8. Box A: G, M, O
Box A and B: A, B
Box B: C
Outside the boxes: F, K
9. **A.*** Yes, a square is a rhombus, it has 4 sides of equal length.
B.* Yes, a square is a rectangle, it has 4 sides and 4 right angles.
C.* No, not all rectangles are squares. A rectangle doesn't need all 4 sides to be equal.

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Classifying Shapes

Triangle Riddles



Find the triangle above that matches the clues in each riddle. Use Power Polygons™ to compare angles and a centimeter ruler to compare sides. Be ready to tell how your answer matches the clues.

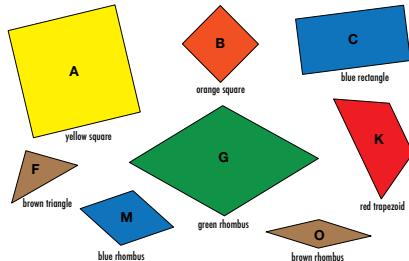
1. All of my sides are the same length. That means I am an **equilateral** triangle. I am also an acute triangle.
2. Two of my sides are the same length. That means I am an **isosceles** triangle. I am also an obtuse triangle.
3. None of my sides are the same length. That means I am a **scalene** triangle. I am also a right triangle.
4. None of my sides are the same length. All of my angles are acute. (I am a scalene triangle and an acute triangle.)
5. None of my sides are the same length. I am an obtuse triangle.
6. Two of my sides are the same length. I am a right triangle.
7. Two of my sides are the same length. I am an acute triangle.
Hint: There are two right answers to this riddle.

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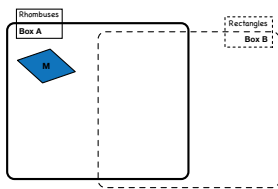
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Sorting Polygons

8. Work with a partner. Use the *Sorting Polygons* page in the *Student Activity Book* to sort the eight Power Polygons™ below.



Put rhombuses in Box A and Rectangles in Box B. Some polygons may go outside both boxes. Some may go in both boxes. The drawing shows you how to start.



9. Use your work for Question 8 to answer the questions below.

- A. Is a square also a rhombus? Use properties to tell how you know.
- B. Is a square also a rectangle? Use properties to tell how you know.
- C. Are all rectangles squares? Use properties to tell how you know.

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*Answers and/or discussion are included in the lesson.

10. A. Make the shape to the right using Power Polygons™.

(You will need to work with a partner.)

Add it to your *Sorting Polygons* page.

B. Make a rhombus. Use two or more Power Polygons™.

Add the rhombus to Box A. Show or tell how you know your shape is a rhombus.

C. Make a rectangle. Add it to Box B. Show or tell how you know it is a rectangle.



Polygon Riddles

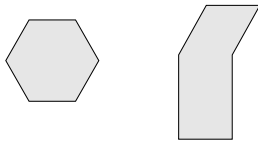
Name the polygon that matches the clues in each riddle below. Choose from the eight Power Polygons™ in Question 8. Be ready to tell how your answer matches the clues.

1. Two of my sides are the same length. I am not a quadrilateral.
2. I have four right angles. I am not a square.
3. Two of my sides are parallel. I am not a parallelogram.
4. I have the largest and the smallest angles of all the eight shapes.
5. I am a rhombus with right angles. (There are two right answers to this riddle.)

Comparing Polygons

6. Compare the two polygons below. How are they alike? How are they different? Think about the properties of each shape.

What can you say about the sides, angles, and lines of symmetry?

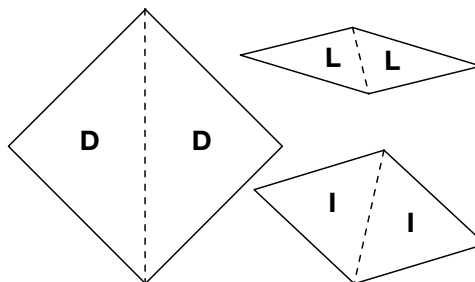


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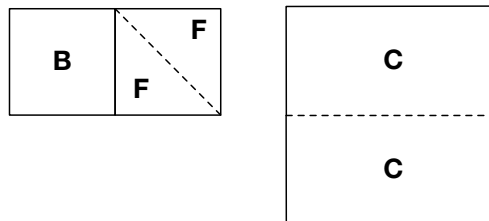
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10. A. The shape belongs in both Box A and Box B.

B. Shapes will vary. If it has 4 sides of equal length, it is a rhombus. Possible solutions for a rhombus:



C. Shapes will vary. If it has 4 sides with 4 right angles, it is a rectangle. Two possible solutions for a rectangle:



Homework

Questions 1–6 (SG p. 424)

1. F
2. C
3. K
4. O
5. A, B
6. Both shapes have 6 sides. The first shape has 6 equal sides, and 6 equal angles. The second shape has different side lengths and angles. The first shape has 6 lines of symmetry, the second shape has none.

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Student Activity Book

Triangle Sort Cards 1 and 2*
(SAB pp. 371–373)

See Figure 1 and lesson for discussion.

Sorting Polygons* (SAB pp. 375–376)

See lesson.

Name _____ Date _____

Triangle Sort Cards 1

- Cut out the 14 cards on the two *Triangle Sort Cards 1* and *2* pages. Cut on the dotted lines.
- Sort the triangles into three groups.
- Choose groups so that no triangle belongs in more than one group.
- Be ready to explain what each group has in common.

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Name _____ Date _____

Triangle Sort Cards 2

- Cut out the 14 cards on the two *Triangle Sort Cards 1* and *2* pages. Cut on the dotted lines.
- Sort the triangles into three groups.
- Choose groups so that no triangle belongs in more than one group.
- Be ready to explain what each group has in common.

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Sorting Polygons

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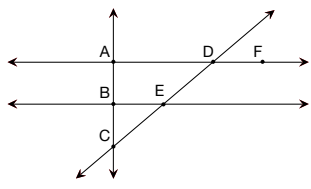
*Answers and/or discussion are included in the lesson.

Name _____ Date _____

Shapes Quiz

You will need the following tools:

- Geometry Word Charts
- Polygon Names pages in the *Student Guide* Reference section
- 1 set of Power Polygons™
- *Shapes Quiz: Cut-Outs* page
- scissors
- ruler



Use the drawing above to answer Questions 1–2.

- A. Name a line that intersects \overline{AD} , but is **not** perpendicular to \overline{AD} .

- B. Use a ruler to draw a line parallel to \overline{DE} that goes through point F.

3. Ana said, "Quadrilateral ABED is a trapezoid." Do you agree with Ana? Use properties to show or tell how you decided.

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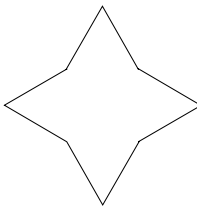
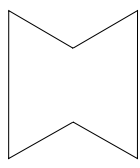
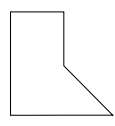
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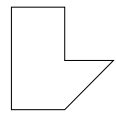
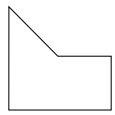
Name _____ Date _____

Cut out the shapes on the *Shapes Quiz: Cut-Outs* page. Use the shapes to answer Questions 3–4. You can fold them or turn them.

- Use a ruler to draw the lines of symmetry on each shape below. Write the number of lines of symmetry under each shape.

Star	Butterfly	Boot
		
_____	_____	_____

- A. Circle the shape below that is congruent to the boot in Question 3.

		
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

- Show or tell how you know the shape you chose is congruent to the boot.

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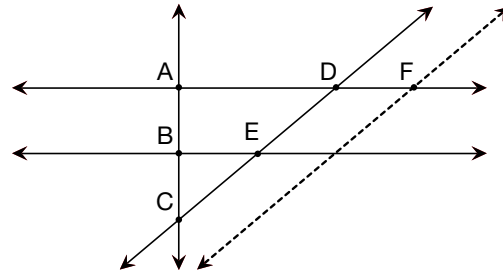
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Shapes Quiz

Questions 1–7 (TG pp. 1–5)

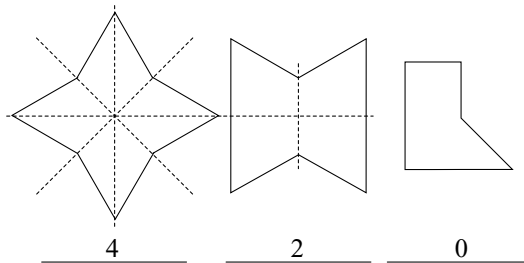
1. A. \overleftrightarrow{CD}

B.

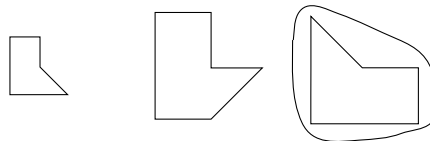


2. Yes, quadrilateral ABED has 4 sides with one pair of parallel sides, so it is a trapezoid.

3.

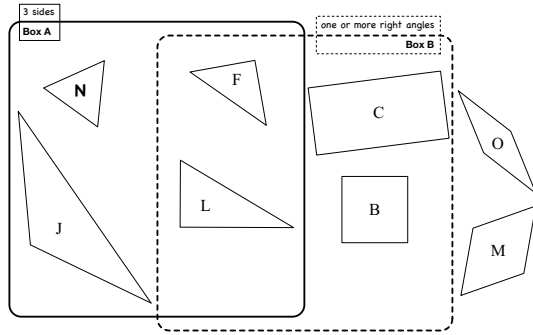


4. A.



B. It is the same shape and size as the boot; it has been turned and flipped.

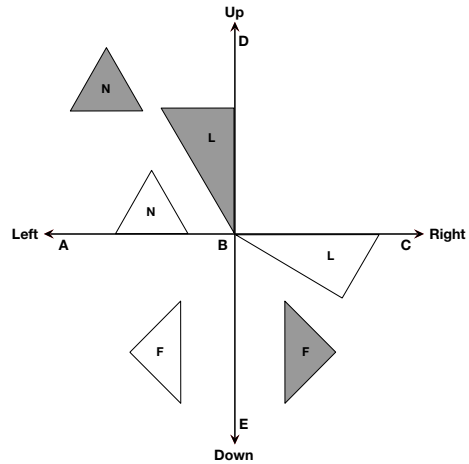
5. **A.** Flip over \overleftrightarrow{DE}
B. Slide down and right
C. Rotate around B
6. Box A should contain Shapes N and J, Box B should contain Shapes C and B, and Shapes F and L are in both boxes. Shapes O and M are outside the boxes.



7. **A.** Triangles
B. Rectangles
C. Right triangles
D. Possible response: three sides, one right angle, two acute angles

Name _____ Date _____

5. Describe how each shaded triangle below can move to its white copy.
- A.** Triangle F
B. Triangle N
C. Triangle L



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Name _____ Date _____

6. Use these eight Power Polygons™ from your set for this question.

Put shapes with three sides into Box A.
 Put shapes with right angles into Box B.
 Some may go in both boxes. Some may go outside the boxes.
 Sketch each shape where it belongs. Write the letter inside.
 The drawing shows you how to start.

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Name _____ Date _____

7. Use your work from Question 6 to answer these questions:
- A.** What is one name for the shapes in Box A? _____
B. What is one name for the shapes in Box B that are **not** also in Box A?

C. What is one name for the shapes that are in both Box A and Box B?

D. List three properties of the shapes that are in both A and B.

Shapes Quiz Feedback Box	Expect-ation	Check In	Comments
Draw and identify perpendicular and parallel lines. [Q# 1]	E4		
Describe shapes using their properties. [Q# 2, 7D]	E5		
Analyze shapes using their properties. [Q# 2, 3, 6, 7]	E5		
Classify shapes using their properties. [Q# 6, 7]	E6		
Identify line (reflective) symmetry. [Q# 3]	E7		
Identify congruent shapes. [Q# 4]	E8		
Identify slides, flips, and turns of shapes. [Q# 5]	E9		
Explain answers using properties. [Q# 2, 4B]	E10		

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