

Student Guide

Workshop: Shapes Classification
(SG pp. 290–292)

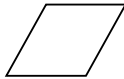
Questions 1–7

1. A. rectangle
B. trapezoid
C. isosceles triangle
2. A. Shapes 1, 2, 4, 8, and 12
B. Shapes 1, 2, 3, 4, 6, 7, 11, and 12
C. Shapes 1, 2, 4, and 12
- 3.* See Figure 3 in the lesson.
 - A. Shapes 1, 2, 3, 4, 6, 7, 11, 12; These shapes are called parallelograms.
 - B. Shapes 8, 9, and 10; These shapes are called trapezoids.
 - C. Shape 5
 - D. Possible response: I do not agree with Jessie. Shape 5 does not have any parallel sides so it does not belong in Box A or Box B.

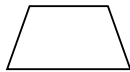
4. A. square



- B. rhombus



- C. trapezoid



- D. square

- E. square

- F. square

- 5.* See Figure 4 in the lesson.

- A. Shapes 2, 3, 6, and 7
- B. Rhombuses
- C. No, Shape 9 does not have 2 sets of parallel sides and congruent sides. It is a trapezoid with one set of parallel sides.
- D. I do not agree with Ana. A square is a rectangle and a rhombus so it needs to go into the overlap to show that it can be classified as both shapes.
- E. I do agree with Peter's placement. He drew a rectangle. A rectangle has four right angles and the opposite sides are congruent.

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

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Workshop: Shapes Classification

✓ Self-Check: Question 1

1. What shape am I? Use the clues to name the polygon. Draw a sketch of each shape.
 - A. I have four right angles but I am not a square.
 - B. I am a quadrilateral with only one pair of parallel sides.
 - C. Two of my three sides are congruent and I have a right angle.

Use the following menu to choose the problems you will practice.

- Decide if you are "Working On It" or you "Got It" to choose which problems you should complete.
- If one set of problems seems too easy or too hard, choose a different set to complete.

Workshop Menu		
Can I Do This?	Working On It! <small>I could use some extra help.</small>	Got It! <small>I'm ready for a challenge.</small>
Identify and describe two-dimensional shapes.	★ Q# 2–4	■ Q# 5–7
Classify two-dimensional shapes in a hierarchy based on properties.	★ Q# 2–4	■ Q# 5–7

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Use the *Quadrilateral Cards* pages and the *Sorting Board* pages in the *Student Activity Book* to answer Questions 2–7.

- *2. Look at the quadrilaterals on the Quadrilateral Cards.
 - A. List the shapes that have right angles.
 - B. List which shapes have at least two congruent sides.
 - C. List the shapes that are rectangles.
- *3. Label "Box A" on the *Sorting Board* page as "2 pairs of parallel sides." Label "Box B" as "1 pair of parallel sides." Sort the Quadrilateral Cards.
 - A. Which shapes have two pairs of parallel sides? What are these shapes called?
 - B. Which shapes have only one pair of parallel sides? What are these shapes called?
 - C. Which shapes are in neither Box A nor Box B?
 - D. Jessie placed Shape 5 in both Box A and Box B. Do you agree with her placement? Why or why not?
- *4. What shape am I? Use the clues to name the polygon. Draw a sketch of each shape.
 - A. I am a quadrilateral that has four right angles. All of my sides are the same length.
 - B. I am a quadrilateral and all of my sides are the same length. Two of my angles are acute.
 - C. I am quadrilateral with only one set of parallel sides.
 - D. I am a rectangle with four congruent sides
 - E. I am a rectangle that is also a rhombus.
 - F. I am a rhombus that is also a square.
- 5. Place Shape 4 from the *Quadrilateral Cards* page in the space where "Box A" and "Box B" overlap on the *Sorting Board*. Label "Box B" as "Rectangles." Sort the Quadrilateral Cards.
 - A. What other shapes belong in Box A?
 - B. What is an appropriate label for Box A?
 - C. Does Shape 9 belong in Box A? Why or why not?
 - D. Ana sketched a square and placed it in Box A but not in the overlap with Box B. Do you agree with Ana's placement? Why or why not?
 - E. Peter sketched a quadrilateral with four right angles and opposite congruent sides. He put it in Box B. Do you with Peter's placement? Why or why not?

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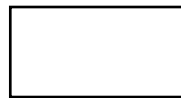
- 6. Use your sorted shapes to answer each question.
- A. Choose all names that describe a square.
parallelogram quadrilateral trapezoid rectangle
 - B. Is a square a rectangle? Why or why not?
 - C. Can a square also be a rhombus? Why or why not?
 - D. Can a rectangle also be a trapezoid? Why or why not?
 - E. Can a rectangle also be a rhombus? Why or why not?
 - F. Can a rectangle also be a parallelogram? Why or why not?
- 7. What shape am I? Use the clues to name the polygon. Draw a sketch of each shape.
- A. I am a quadrilateral and all my angles are congruent. My length is twice as long as my width.
 - B. I have 3 vertices and one is a right angle. I also have 2 congruent sides.
 - C. I am a quadrilateral with four right angles and my opposite sides are congruent.
 - D. I am a quadrilateral with 4 equal sides and no right angles.
 - E. I am a quadrilateral that has one pair of parallel sides. None of my angles are congruent.

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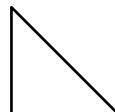
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6. **A.** A square is a parallelogram, a quadrilateral, and a rectangle.
- B.** Yes, a square is a rectangle because it is a quadrilateral with four right angles and a square has four square corners.
- C.** Yes, a square can be a rhombus because a rhombus is an equilateral parallelogram. It is a special kinds of rhombus. It is a rhombus with four right angles.
- D.** No, a rectangle cannot be a trapezoid. A rectangle has two sets of parallel sides and a trapezoid has only one set of parallel sides.
- E.** Yes, a rectangle that is a square is also a rhombus but not all rectangles are rhombuses. A rectangles has four right angles but it does not have to have congruent sides.
- F.** Yes, a rectangle can also be a parallelogram. A parallelogram is a quadrilateral with 2 pairs of congruent sides and a rectangle has 2 pairs of congruent sides. It is a special type of parallelogram because it also has 4 right angles

7. **A.** rectangle



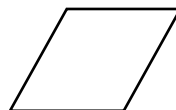
- B.** right isosceles triangle



- C.** square or rectangle



- D.** rhombus



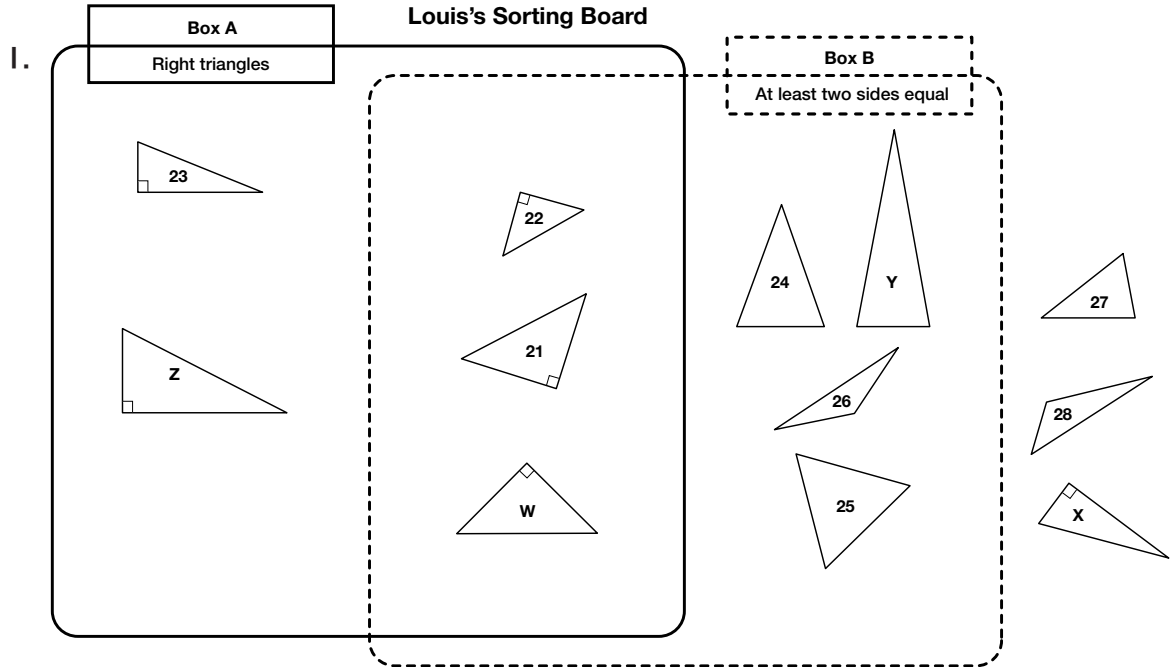
- E.** trapezoid



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Teacher Guide

Louis Sorts Triangles (TG pp. 1–3)
 Questions 1–10



1.
 - A. All the shapes in Box B have at least 2 sides that are equal.
 - B. All the triangles in Box A have a right angle.
2. right triangles
3. Look for Shape Z in the figure shown in Question 1.
4. There is not one classification for the shapes in Box B. Some are isosceles triangles and some are equilateral triangles.
5. Look for Shape Y in the figure shown in Question 1.
6. Triangles 27 and 28 have no equal sides or a right angle.
7. Look for Shape X in the figure shown in Question 1.
8. isosceles right triangles
9. Look for Shape W in the figure shown in Question 1.
10. I do not agree with Julie. The triangle can be classified in Box B because it has at least two sides that are equal. It does not have a right angle so it cannot be classified with the shapes in Box A. The shape belongs in the section of Box B that does not overlap with Box A.

Answer Key • Lesson 7: Workshop: Shapes Classification

Name _____ Date _____

Louis Sorts Triangles

- Louis started to sort some triangles on his sorting board. Use the cards in the Triangle Sort Cards section and Louis's Sorting Board to continue to sort the triangles. Attach the cards to the sorting board.
 - What are the properties of all the shapes in Box B? Label the box on the sorting board.
 - What are the properties of all the shapes in Box A? Label the box on the sorting board.
- What is an appropriate classification for all the shapes in Box A?
- Sketch a new shape that can only be classified with the shapes in Box A. Label it Shape Z and attach it to the appropriate section of the sorting board.
- Is there one way to classify or name all the shapes in Box B?
- Sketch a new shape that can only be classified with the shapes in Box B. Label it Shape Y and attach it to the appropriate section of the sorting board.
- Which triangles cannot be classified in Box A or Box B? Why?

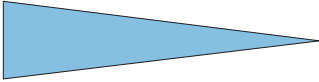
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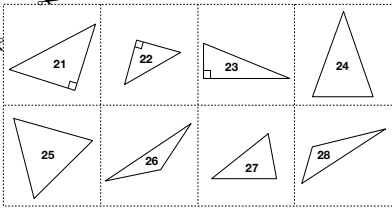
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Name _____ Date _____

- Sketch a new triangle that cannot be classified in Box A or Box B. Label it Shape X and attach it to the appropriate section of the sorting board.
- What is an appropriate name for all the shapes that can be classified in Box A and Box B?
- Sketch a new shape that can be classified with shapes in Box A and Box B. Label it Shape W and attach it to the appropriate section of the sorting board.
- Julie placed the shape below in the section that shows the overlap between Box A and Box B. Do you agree with Julie? Why or why not?



Triangle Sort Cards

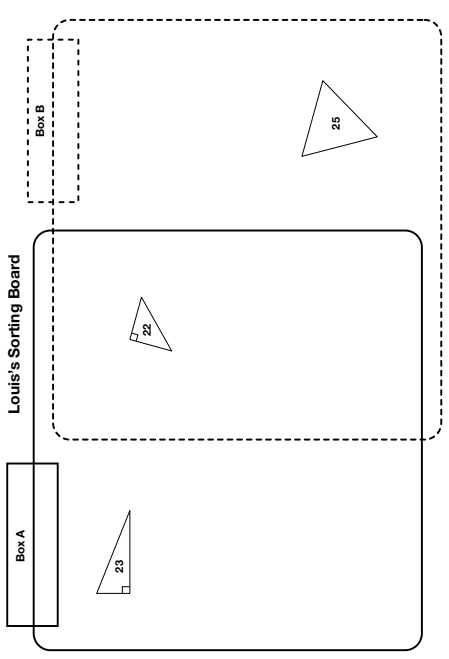


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Name _____ Date _____

Louis Sorts Triangles Feedback Box

Identify and describe the properties two-dimensional shapes	Expectation	Check In	Comments
Classify two-dimensional shapes in a hierarchy based on properties.	E4		
Justify conclusions using geometric properties.	E7		

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