Classifying Two-Dimensional Figures

Grade 5 Math • Section 10.4

Name: _____	Date: _____	Score: _____ / 12

Quick Review and Helpful Hints

Hierarchy of quadrilaterals: Quadrilateral ⊃ Parallelogram ⊃ Rectangle ⊃ Square. Quadrilateral ⊃ Parallelogram ⊃ Rhombus ⊃ Square. Quadrilateral ⊃ Trapezoid.

Triangles: By sides: equilateral (all equal), isosceles (2 equal), scalene (none equal). By angles: acute (all $< 90°$), right (one $= 90°$), obtuse (one $> 90°$).

Figures can belong to more than one category. A square is a rectangle, rhombus, parallelogram, **and** quadrilateral.

Example: Classify a figure with 4 equal sides and 4 right angles. Name all categories it belongs to.

Four equal sides makes it a rhombus. Four right angles makes it a rectangle. Both a rhombus and a rectangle means it is a square. It is also a parallelogram and a quadrilateral.

Answer: Square, rectangle, rhombus, parallelogram, quadrilateral

Practice Problems

Classify each figure. List all categories it belongs to.

1. A shape has 4 sides, 2 pairs of parallel sides, and 4 right angles but sides are not all equal.

_____

2. A shape has 3 sides, all different lengths, and one $90°$ angle.

_____

3. A shape has 4 equal sides but no right angles.

_____

4. A shape has 4 sides and exactly one pair of parallel sides.

_____

5. A shape has 3 sides all the same length.

_____

6. Can a triangle be both right and isosceles? Explain.

_____

7. A shape has 4 sides, opposite sides parallel and equal, and no right angles. What is it?

_____

8. Is every square a rhombus? Is every rhombus a square? Explain.

_____

9. A triangle has sides of length 5 cm, 5 cm, and 8 cm. Classify it by sides.

_____

10. Name a quadrilateral that is NOT a parallelogram.

_____

Word Problems

11. A city park is shaped like a quadrilateral with two pairs of parallel sides and all four angles are $90°$, but not all sides are equal. What shape is the park? List all categories it belongs to.

_____

12. Draw or describe two different quadrilaterals that are both parallelograms but are NOT rectangles. What properties do they share?

_____

Scan Me

Answer Keys

1. rectangle
2. right scalene triangle
3. rhombus
4. trapezoid
5. equilateral triangle
6. Yes
7. parallelogram
8. Yes; no
9. isosceles triangle
10. trapezoid
11. rectangle; quadrilateral and parallelogram
12. rhombus and slanted parallelogram

Step-by-Step Explanations

1. Start with the main idea. For classifying 2-D figures, four right angles and two pairs of parallel sides make a rectangle; not all sides equal means it is not a square. Use the properties one at a time: sides, angles, and parallel sides.

2. Keep the work tidy. For classifying 2-D figures, it has one right angle and all side lengths are different. A shape can belong to more than one category when it satisfies more than one definition.

3. Look at what the numbers mean. For classifying 2-D figures, four equal sides with no right angles describes a rhombus. Counterexamples are useful: one shape that breaks a claim shows the claim is not always true.

4. Use the setup first. For classifying 2-D figures, exactly one pair of parallel sides describes a trapezoid. Use the properties one at a time: sides, angles, and parallel sides.

5. Check the size of the answer. For classifying 2-D figures, all three sides have the same length. A shape can belong to more than one category when it satisfies more than one definition.

6. Match the operation to the words. For classifying 2-D figures, a right isosceles triangle can have a 90° angle and two equal legs. Counterexamples are useful: one shape that breaks a claim shows the claim is not always true.

7. Write the important values first. For classifying 2-D figures, opposite sides parallel and equal describes a parallelogram; no right angles means not a rectangle. Use the properties one at a time: sides, angles, and parallel sides.

8. Follow the pattern carefully. For classifying 2-D figures, every square has four equal sides, so it is a rhombus; a rhombus does not need four right angles. A shape can belong to more than one category when it satisfies more than one definition.

9. Start with the main idea. For classifying 2-D figures, two sides are equal: 5 cm and 5 cm. Counterexamples are useful: one shape that breaks a claim shows the claim is not always true.

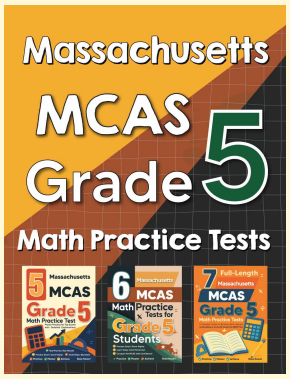
10. Keep the work tidy. For classifying 2-D figures, a trapezoid is a quadrilateral but not a parallelogram. Use the properties one at a time: sides, angles, and parallel sides.

11. Look at what the numbers mean. For classifying 2-D figures, two pairs of parallel sides and four right angles make it a rectangle, which is also a parallelogram and quadrilateral. A shape can belong to more than one category when it satisfies more than one definition.

12. Use the setup first. For classifying 2-D figures, both have two pairs of parallel opposite sides, but they do not have four right angles. Counterexamples are useful: one shape that breaks a claim shows the claim is not always true.

Want Even More Practice?

Check Out Our Other Massachusetts MCAS Test Books!



Massachusetts MCAS Grade 5 Math Preparation Bundle

18 full-length practice tests across three books (5 + 6 + 7)

No repeated questions—maximum practice value!

18 Tests!
3 Books
One Bundle

Important: All our test books contain **unique, completely different tests** from each other! Each book offers fresh practice questions—no repeats!

5 Practice Tests

- ✓ 5 complete practice tests with detailed explanations
- ✓ Perfect foundation for MCAS test preparation
- ✓ Builds confidence and test-taking skills
- ✓ High-quality questions aligned with state standards

Start your practice journey!

6 Practice Tests

- ✓ 6 complete practice tests with detailed explanations
- ✓ **Unique tests**—different from the 5 tests book
- ✓ Perfect for more practice after mastering 5 tests
- ✓ Builds even more confidence and test-taking skills
- ✓ Same high-quality questions aligned with standards

Take your practice to the next level!

7 Practice Tests

- ✓ 7 complete practice tests for maximum preparation
- ✓ **Unique tests**—different from 5 and 6 tests books
- ✓ The most comprehensive practice for Grade 5
- ✓ Ideal for students aiming for top scores
- ✓ Extensive practice builds mastery and confidence

Go all the way with comprehensive practice!