

Grade 5 • Unit 7 Worksheet

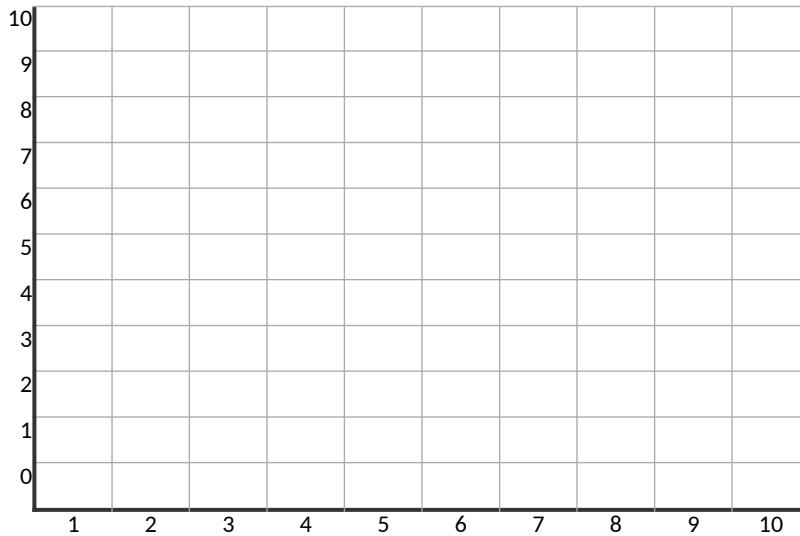
Shapes on the Coordinate Grid

Name: _____

Date: _____

Part A • Plotting Points

1. On the coordinate grid below, plot and label the points: A(3, 5), B(7, 2), C(0, 4), D(6, 0).



Which point is ON the x-axis? _____ Which point is ON the y-axis? _____

2. What are the coordinates of the ORIGIN?

Origin: (_____ , _____)

Why is the origin special?

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3. Mai says 'the point (4, 7) is 4 units up and 7 units to the right.' Is she right?

Is she right? Yes / No

If not, where IS (4, 7) located?

Part B • Hierarchy of Shapes

4. Circle ALL that are true.

- (a) Every square is a rectangle. True / False
- (b) Every rectangle is a square. True / False
- (c) Every parallelogram is a quadrilateral. True / False
- (d) Every rhombus is a square. True / False
- (e) Every square is a rhombus. True / False

Explain (a) and (b) — why is one direction true and the other not?

5. Draw a quadrilateral that is a PARALLELOGRAM but NOT a rectangle.

What property does a rectangle have that your parallelogram does not?

6. True or false: A square has all the properties of a rectangle AND all the properties of a rhombus.

Answer: True / False

List 3 properties of a square that prove your answer:

Part C • Triangles

7. Identify each triangle by its sides and its angles.

A triangle with three equal sides is _____.

A triangle with two equal sides is _____.

A triangle with a right angle is _____.

Can a triangle be BOTH right AND isosceles? Yes / No. Sketch one or explain:

Part D • Numerical Patterns

8. Rule 1: Start at 0. Add 2 each time. Rule 2: Start at 0. Add 6 each time.

Complete the table:

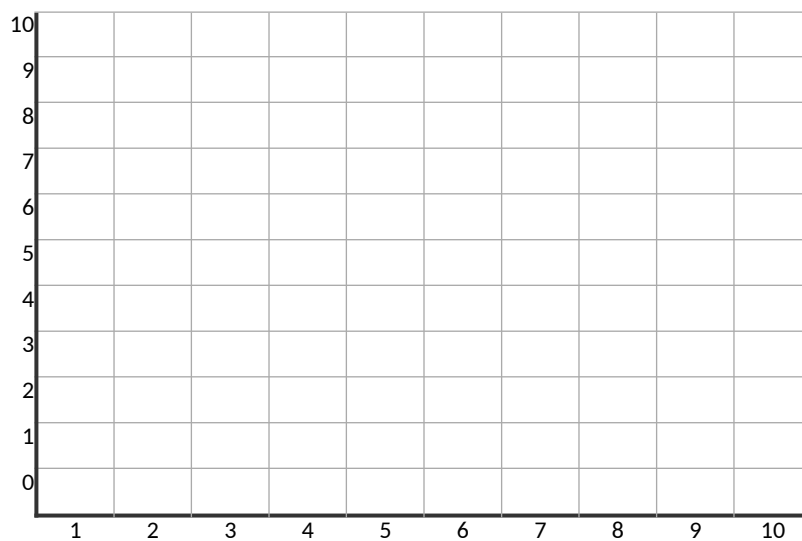
Rule 1: 0, 2, _____, _____, _____, _____

Rule 2: 0, 6, _____, _____, _____, _____

How does each Rule-2 term compare to the matching Rule-1 term?

If a Rule-1 term is 20, what is the matching Rule-2 term? _____

9. On the coordinate grid below, plot the first 4 pairs from problem 8 as ordered pairs (Rule 1, Rule 2).



What do you notice about the pattern of points?

Part E • Thinking Deeply

10. Diego and Sara argue about whether a square is a rectangle. Diego says: 'A square has 4 right angles AND 4 equal sides, so it has MORE than a rectangle — so it is not the same.' Who is right?

Who is correct? _____

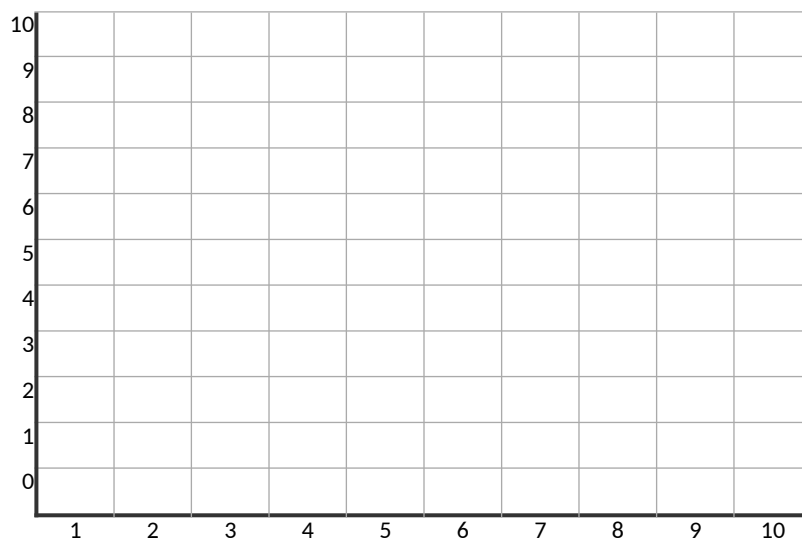
Explain using the idea of CATEGORY and SUBCATEGORY:

11. Plot the points (2, 3), (6, 3), (6, 7), (2, 7) on the coordinate grid. Connect them in order.

What shape did you draw? _____

What are its side lengths? _____ and _____

What is its area? _____ square units



12. Can a trapezoid ever be a parallelogram? (Use the inclusive definition: a trapezoid is a quadrilateral with at least one pair of parallel sides.)

Answer: Yes / No

Explain: