

Geometry and the Coordinate Plane: practice solutions, Grade 5 – download the PDF

Written solutions to the chapter problems. Check each step, then correct yourself.

1 Axes and origin



- a. The x-axis is horizontal and the y-axis is vertical.
- b. The origin is $(0, 0)$, where the two axes cross.
- c. The move right (the x-coordinate) comes first, then the move up.

2 Same numbers, different points



For $(6, 2)$: move 6 units right, then 2 units up. For $(2, 6)$: move 2 units right, then 6 units up. They are **different points**, because the order of the numbers matters.

3 Reading ordered pairs



Read the right move first, then the up move: A $(1, 4)$, B $(3, 2)$, C $(5, 5)$, D $(7, 1)$.

4 True or false?



- a. **True.** On the x-axis you do not move up, so $y = 0$.
- b. **False.** You move 0 right and 5 up, so $(0, 5)$ is on the y-axis.
- c. **False.** The first number tells how far to go right.
- d. **True.** That point is $(0, 0)$.

5 Name that quadrilateral



- a. A **parallelogram**.
- b. A **rectangle** (4 right angles, but not a square because the sides differ).
- c. A **trapezoid**.

6 Triangles by their sides



- a. All sides are equal: **equilateral**.
- b. Two sides are equal: **isosceles**.
- c. No sides are equal: **scalene**.

7 Parallel or perpendicular?



- a. Parallel: they stay the same distance apart.
- b. Perpendicular: they form a square corner.
- c. Parallel.
- d. Perpendicular: at 3:00 the hands form a right angle.

8 Distances on the grid



- a. The first numbers are equal, so the segment is vertical. $6 - 1 = 5$ units.
- b. The second numbers are equal, so the segment is horizontal. $7 - 2 = 5$ units.
- c. One is vertical and the other is horizontal, so they are **perpendicular**.

9 Which quadrilateral is PQRS?



- a. P (1, 1), Q (5, 1), R (6, 4), S (2, 4).
- b. PQ: $5 - 1 = 4$ units. SR: $6 - 2 = 4$ units.
- c. PQ and SR are both horizontal, so they are parallel. To go from Q to R you move 1 right and 3 up. To go from P to S you also move 1 right and 3 up. So QR and PS are parallel too. With two pairs of parallel sides, PQRS is a **parallelogram**. It is **not a rectangle**, because the slanted sides do not meet the horizontal sides at a right angle.

10 The bike courier



- a. Bakery to school: $8 - 2 = 6$ units. School to library: $5 - 1 = 4$ units.
- b. $6 + 4 = 10$ units, and $10 \times 0.5 = 5$ miles (about 8 kilometers).
- c. One part is vertical and the other is horizontal: **perpendicular**.

11 Always, sometimes or never?



- a. **Always**. A square has 4 right angles.
- b. **Sometimes**. Only when all 4 sides are equal.
- c. **Sometimes**. Only when the rhombus is a square.
- d. **Never**. The three sides of a triangle meet in pairs, so no two of them are parallel.

12 Triangles by their angles



- a. All three angles are smaller than 90° : **acute**.
- b. One angle is exactly 90° : **right**.
- c. One angle (110°) is larger than 90° : **obtuse**.

13 Perimeters from attributes



- a. A rhombus has 4 equal sides: $30 \div 4 = 7.5$ cm.
- b. Half the perimeter is $26 \div 2 = 13$ in, which is length plus width. So the width is $13 - 8 = 5$ in.

14 Sorting in a Venn diagram



- a. Square: parallel sides and right angles, so **both**.
- b. Rhombus with no right angle: **A only**.
- c. Right trapezoid: **both**.
- d. Kite: **neither**.

15 Finish the square



- a. AB is 4 units long, and BC is 4 units long. D must be 4 units above A, so D is at **(2, 7)**.
- b. With **D(2, 6)**, the side AD would be $6 - 3 = 3$ units, not 4, and the top side DC would not be horizontal. The figure would not be a square.

16 Missing corner of a parallelogram



To go from K to L you move 3 units right. Opposite sides are parallel and equal, so to go from N to M you also move 3 units right. So N is 3 units to the left of M: $(6 - 3, 4) = (3, 4)$.

Check: from K to N you move 2 right and 3 up, and from L to M you also move 2 right and 3 up. N is at $(3, 4)$.

17 Which statements are true?



- a. **True.** A rhombus has two pairs of parallel sides.
- b. **False.** A slanted parallelogram has no right angle, so it is not a rectangle.
- c. **True.** A square has 4 equal sides.

A square is a quadrilateral, a parallelogram, a trapezoid, a rectangle, a rhombus and a square.

18 The drone flight



- a. $(2, 1) \rightarrow (5, 1) \rightarrow (5, 5) \rightarrow (3, 5) \rightarrow (3, 4)$. It finishes at $(3, 4)$.
- b. $3 + 4 + 2 + 1 = 10$ units, and $10 \times 20 = 200$ meters (about 656 feet).
- c. Go left $3 - 2 = 1$ unit and down $4 - 1 = 3$ units: 4 units, which is $4 \times 20 = 80$ meters.

19 Right and isosceles



- a. The bottom side goes from $(1, 1)$ to $(5, 1)$: 4 units. The left side goes from $(1, 1)$ to $(1, 5)$: 4 units. These sides are horizontal and vertical, so they are perpendicular and the angle at $(1, 1)$ is right. The triangle is **isosceles and right**.
- b. **No**. If two angles were right, two sides would both be perpendicular to the same third side. Those two sides would be parallel and could never meet to make the third corner.

20 Triangle Venn diagram



- a. A only.
- b. Both (in the overlap).
- c. B only.
- d. A only.
- e. Neither.
- f. Neither.

21 The flower bed



- a. The bottom side and the top side are both horizontal, so they are parallel. From $(7, 1)$ to $(5, 4)$ you move 2 left and 3 up. From $(1, 1)$ to $(3, 4)$ you move 2 right and 3 up. These sides lean in different directions, so they are not parallel. The bed is a **trapezoid** with exactly 1 pair of parallel sides.
- b. Bottom: $7 - 1 = 6$ units, so $6 \times 1.5 = 9$ m. Top: $5 - 3 = 2$ units, so $2 \times 1.5 = 3$ m.
- c. $9 + 3 = 12$ m of fence.



Test yourself: quick challenge for Grade 5

[Change level](#)

Level : **Grade 5**

6 random questions, instant feedback.



Start the challenge



Keep exploring with Zyro



Math practice

Geometry and the Coordinate Plane:
math practice, Grade 5



Math quizzes

Geometry and the Coordinate Plane:
math quiz, Grade 5



Math tests



Math practice

Geometry and the Coordinate Plane:
math test, Grade 5

Adding and Subtracting Decimals: math
practice, Grade 5

 **Math practice**

Place Value and Decimals: math
practice, Grade 5

 **Math quizzes**

Adding and Subtracting Decimals: math
quiz, Grade 5

Zyro vous emmène sur nos sites partenaires

Embarquez pour d'autres planètes du savoir et leurs applis.

Décollage