

Grade 4 - Lines, Rays and Classifying Shapes - Answer Key

Common Core 4.G.A.1, 4.G.A.2 · maths-pdf.fr/en/

Each answer explains why, using the key words: endpoint, parallel, perpendicular, right, acute, and obtuse. The final answer is in bold. Drawing problems show a finished picture that you can compare with your own.

Grade 4 · Common Core State Standards: **4.G.A.1, 4.G.A.2**

Exercise 1 - Name the figures

Two endpoints: line segment. One endpoint: ray. No endpoints and arrows both ways: line.

segment, ray, line

Exercise 2 - Count the endpoints

A segment has 2, a ray has 1, and a line has 0.

2, 1, and 0

Exercise 3 - Parallel or perpendicular

- a. Opposite edges never meet: parallel.
- b. A wall meets the floor at a right angle: perpendicular.
- c. Rails stay the same distance apart: parallel.

parallel, perpendicular, parallel

Exercise 4 - Name the angles

A is 55° , less than 90° : acute. B is 90° : right. C is 125° , more than 90° : obtuse.

A acute, B right, C obtuse

Exercise 5 - Draw a segment

Draw a straight piece with a dot at each end and label the dots.

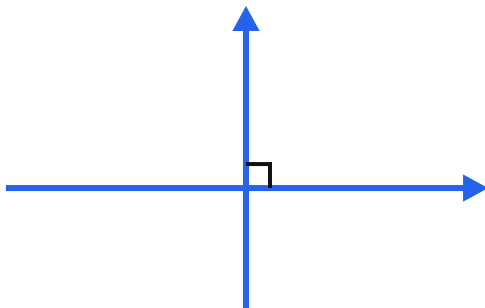


Segment MN.

Segment MN

Exercise 6 - Draw perpendicular lines

Draw one line. Use the corner of a card to draw a second line that crosses it at 90° . Mark the square.



Perpendicular lines.

Two lines crossing at 90°

Exercise 7 - Count the right angles

Each corner has a small square. There are 4 corners.

4 right angles

Exercise 8 - Count parallel sides

The top and bottom sides are marked with arrows. The slanted sides are not parallel.

1 pair

Exercise 9 - Classify triangles

- a. All angles are less than 90° : acute.
- b. It has a 90° angle: right.
- c. It has a 120° angle, which is more than 90° : obtuse.

acute, right, obtuse

Exercise 10 - Is it a right triangle?

One corner has a small square, so it is a right angle.

Yes, it is a right triangle.

Exercise 11 - Name the quadrilateral

Four right angles make a rectangle. All sides equal makes it a square.

a square

Exercise 12 - Complete the table

- 1. Rectangle: 2 pairs, 4 right angles.
- 2. Slanted parallelogram: 2 pairs, 0 right angles.
- 3. Trapezoid with slanted sides: 1 pair, 0 right angles.
- 4. Right triangle: 0 pairs, 1 right angle.

2 and 4; 2 and 0; 1 and 0; 0 and 1

Exercise 13 - Always, sometimes, never

- a. A square always has 4 right angles.
- b. Two right angles leave no room for a third side, so never.
- c. Some quadrilaterals, like rectangles, have right angles, and some, like slanted parallelograms, do not: sometimes.

always, never, sometimes

Exercise 14 - Perpendicular corners

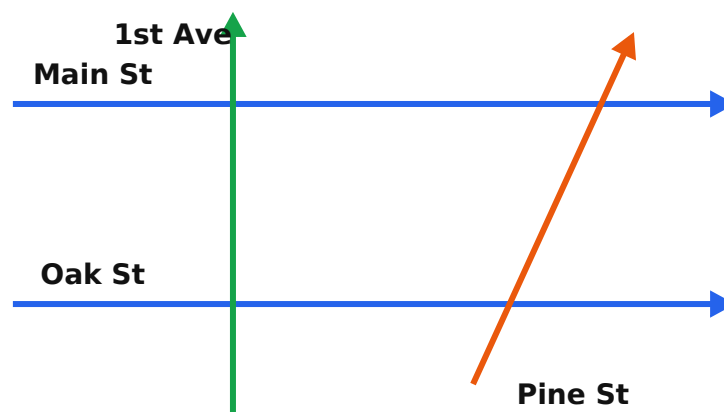
Each corner is a pair of sides meeting at 90° . A rectangle has 4 corners, so 4 pairs.

4 pairs

Exercise 15 - City map

Main St and Oak St stay the same distance apart and never meet: parallel.

1st Ave crosses Main St at 90° : perpendicular.



City map.

Parallel: Main St and Oak St. Perpendicular: 1st Ave and Main St

Exercise 16 - Picture frame

Four right angles and opposite sides parallel make a rectangle.

A square needs all sides equal, but 12 in is not 8 in.

A rectangle; no, it is not a square

Exercise 17 - Wooden ramp

It has one 90° angle, so it is a right triangle.

30° and 60° are both less than 90° , so there are 2 acute angles.

Right triangle; 2 acute angles

Exercise 18 - Clock angles

2:00: hands are 2 numbers apart, $2 \times 30 = 60^\circ$, acute.

3:00: $3 \times 30 = 90^\circ$, right.

5:00: $5 \times 30 = 150^\circ$, obtuse.

acute, right, obtuse

Exercise 19 - Floor tiles

Four sides with two pairs of parallel sides: a parallelogram.

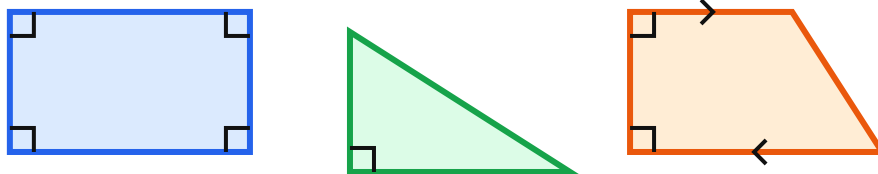
A rectangle needs four right angles, and these tiles have none.

A parallelogram; not a rectangle

Exercise 20 - Flag design

Rectangle: 4. Right triangle: 1. Trapezoid: 2.

$4+1+2=7$.



Diego's flag pieces.

7 right angles