

Grade 4 · Lines, Angles, Shapes and Symmetry

· Worksheet

Common Core 4.G.A.1, 4.G.A.2, 4.G.A.3 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

These 22 problems practice 4.G.A.1, 4.G.A.2 and 4.G.A.3. Start by naming points, lines, rays and segments, then classify angles as right, acute or obtuse. Next, look for parallel and perpendicular lines, sort triangles and four-sided figures, and find lines of symmetry. The last six problems use real situations such as flags, road signs and ramps.

Grade 4 Common Core: 4.G.A.1 · 4.G.A.2 · 4.G.A.3

Problem 1: Name each figure

Write *point*, *line*, *line segment* or *ray* for each drawing.



Drawings (a), (b), (c) and (d) from left to right.

Problem 2: Count the endpoints

How many endpoints does each figure have: a line segment, a ray and a line?

Problem 3: Segments on a line

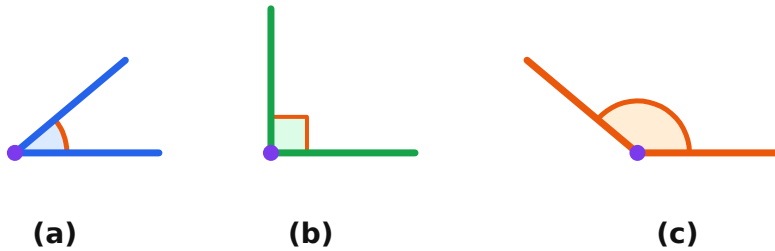
Points A, B and C lie on one line, in that order. Write the name of every line segment whose endpoints are two of these points.



Points A, B and C.

Problem 4: Classify the angles

Write *acute*, *right* or *obtuse* for each angle.



Angles (a), (b) and (c) from left to right.

Problem 5: Clock angles

The minute hand points to 12 on each clock. Classify the angle between the two hands at 3:00, 2:00 and 5:00.



Three clocks.

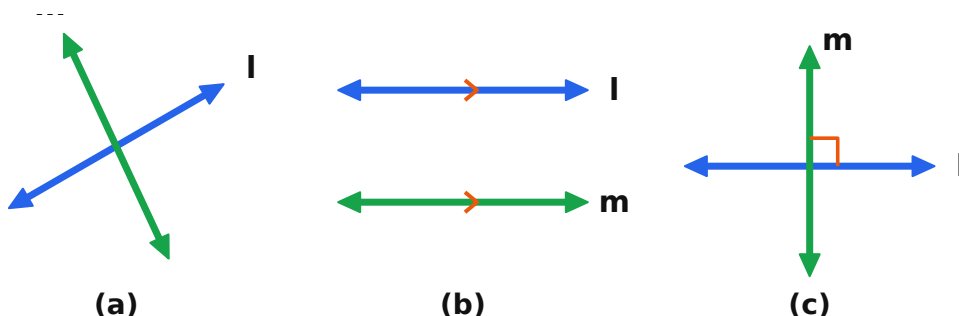
Problem 6: Angles around us

Classify each angle as acute, right or obtuse.

- The corner of a sheet of notebook paper
- The opening of scissors that are barely open
- A laptop screen tilted far back

Problem 7: Parallel or perpendicular

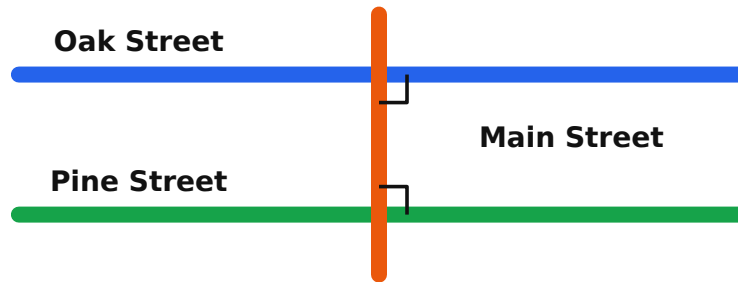
Write *parallel*, *perpendicular* or *neither* for each pair of lines.



Pairs (a), (b) and (c) from left to right.

Problem 8: Street map

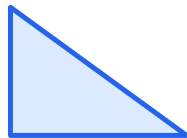
Oak Street and Pine Street never meet. Main Street crosses both of them at square corners. Name a pair of parallel streets and a pair of perpendicular streets.



Oak, Pine and Main Streets.

Problem 9: Classify the triangles

Write *right*, *acute* or *obtuse* for each triangle. In an acute triangle all three angles are smaller than a square corner.



(a)



(b)



(c)

Triangles (a), (b) and (c).

Problem 10: Pairs of parallel sides

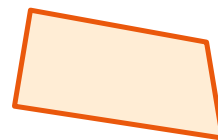
How many pairs of parallel sides does each quadrilateral have?



(a)



(b)



(c)

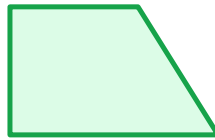
Figures (a), (b) and (c).

Problem 11: Count right angles

Write the number of right angles in each figure.



(a)



(b)



(c)

Figures (a), (b) and (c).

Problem 12: Lines of symmetry

How many lines of symmetry does each figure have?



(a)



(b)



(c)



(d)

Figures (a) to (d).

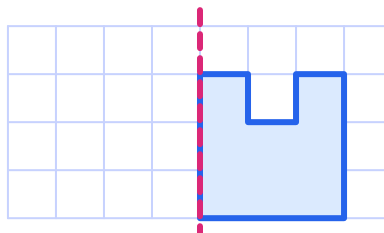
Problem 13: True or false

Write *true* or *false*. If a statement is false, fix it.

- a. A ray has two endpoints.
- b. Perpendicular lines form right angles.
- c. Parallel lines can cross.
- d. An obtuse angle is smaller than a right angle.

Problem 14: Finish the shape

The dashed line is a line of symmetry. Draw the other half of the figure on the left side of the line.



Right half of the figure.

Problem 15: Square and rectangle

Jamal says that a square and a rectangle both have 4 right angles and 2 pairs of parallel sides. Is he right? Explain.

Problem 16: Letters with symmetry

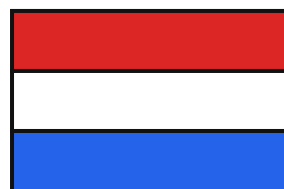
Write the number of lines of symmetry of each block capital letter: H, A, E and Z.

Problem 17: Flag stripes

Sofia sews two rectangular flags. Each flag has three equal stripes. Flag A is red, white, red from top to bottom. Flag B is red, white, blue from top to bottom. How many lines of symmetry does each flag have?



Flag A

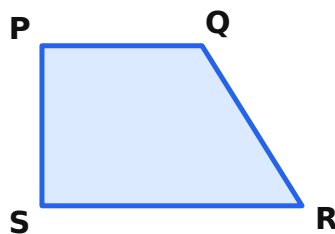


Flag B

Flags A and B.

Problem 18: Quadrilateral PQRS

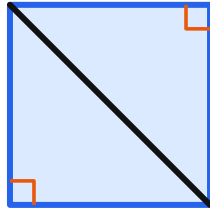
Liam draws quadrilateral PQRS. Side PQ is parallel to side SR. Side PS is perpendicular to both PQ and SR. How many right angles does PQRS have, and how many pairs of parallel sides? Name the figure.



Quadrilateral PQRS.

Problem 19: Sandwich cut

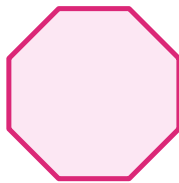
Aisha cuts a square sandwich from one corner to the opposite corner. (a) What kind of triangle is each piece? (b) How many lines of symmetry does the whole square sandwich have?



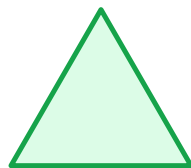
The square sandwich.

Problem 20: Road signs

Find the number of lines of symmetry on each sign: a stop sign (8 equal sides), a yield sign (3 equal sides) and a school-zone sign shaped like a house.



Stop sign



Yield sign

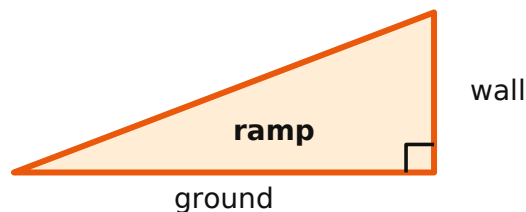


School sign

Three signs, no lines drawn.

Problem 21: Skateboard ramp

The side view of Ethan's ramp is a triangle. The wall is perpendicular to the ground. What kind of triangle is it? How many of its angles are acute?



Side view of the ramp.

Problem 22: Mei's mystery shape

Mei draws a shape with 4 sides. Both pairs of opposite sides are parallel, and none of the angles is a right angle. (a) What type of figure could it be? (b) She tilts the sides until all four angles are right angles. What figure does she have now?