

Class 3 Geometry Worksheet by Thinking Juggernaut

Lines, Angles, Polygons & Symmetry

Name: _____

Date: _____

Total Marks: 24

🎯 What is Geometry?

Geometry is the study of shapes, sizes, and positions of things!

Types of Lines:

- **Straight Line:** Goes on forever in both directions (—)
- **Line Segment:** A line with two end points (—)
- **Ray:** Starts at one point and goes on forever in one direction (→)
- **Parallel Lines:** Two lines that never meet (=)
- **Intersecting Lines:** Two lines that cross each other (×)

Angles:

- **Right Angle:** Forms a perfect corner like in a square (90°)
- **Acute Angle:** Smaller than a right angle (less than 90°)
- **Obtuse Angle:** Bigger than a right angle (more than 90°)

Polygons (Closed Shapes):

- **Triangle:** 3 sides
- **Quadrilateral:** 4 sides (square, rectangle, rhombus, trapezium)
- **Pentagon:** 5 sides
- **Hexagon:** 6 sides

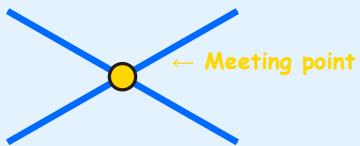
Symmetry: When one half of a shape is a mirror image of the other half

Sample Problem

Problem: Identify if the lines shown are parallel or intersecting.

Example A

These lines are
PARALLEL
(they never meet)

Example B

These lines are
INTERSECTING
(they meet/cross)

Solution:

Example A shows **parallel lines** because they run alongside each other and never meet.

Example B shows **intersecting lines** because they cross each other at one point.

THINKING

Part A: Warm-up Questions

★ Easy Level

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1. How many sides does a triangle have?

2. What type of lines are these?

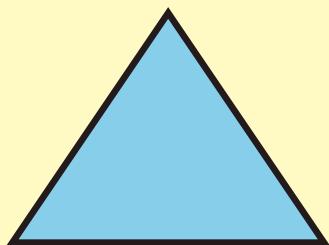


Answer: _____ lines

3. True or False: A square has 4 equal sides.

- True
- False

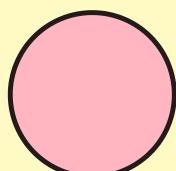
4. Which shape is shown below?



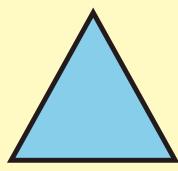
Shape name: _____

5. How many corners does a rectangle have?

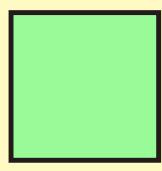
6. Circle the shape that has a right angle:



A) Circle



B) Triangle



C) Square

Answer: _____

7. Name the polygon with 5 sides:

8. Draw a line segment AB in the box below:

Part B: Practice Questions

★★ Medium Level

THINKING

9. Match the angles with their types:

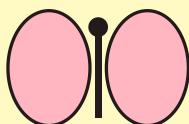
Column A (Angle)	Column B (Type)
	i) Acute Angle
	ii) Right Angle
	iii) Obtuse Angle

Write your answers: a-____, b-____, c-____

10. Which of these shapes is symmetrical? Draw the line of symmetry.



A) Heart



B) Butterfly



C) Blob

Symmetrical shape: _____

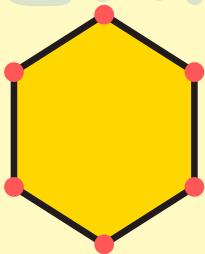
11. True or False: All sides of a rhombus are equal.

- True
- False

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12. How many vertices (corners) does a hexagon have?

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Hexagon

Number of vertices: _____

13. Identify the type of angle shown:



This angle is bigger than a right angle.

Type of angle: _____

14. Complete: A quadrilateral has _____ sides and _____ corners.

I **H****I****N****K****I****N****G**

15. Which letter of the English alphabet has a vertical line of symmetry?

A **F** **Z**

A

F

Z

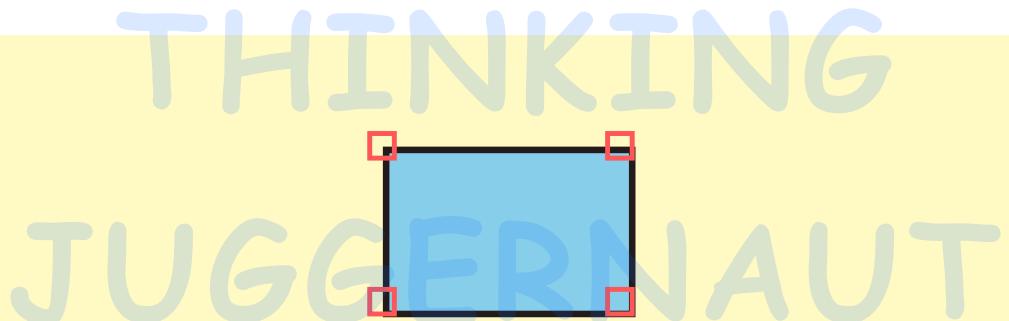
Answer: _____

16. Draw two parallel lines in the space below:

17. Name any 3 quadrilaterals:

1. _____
2. _____
3. _____

18. Count the number of right angles in this shape:



Number of right angles: _____

Part C: Challenge Questions

★★★ Hard Level

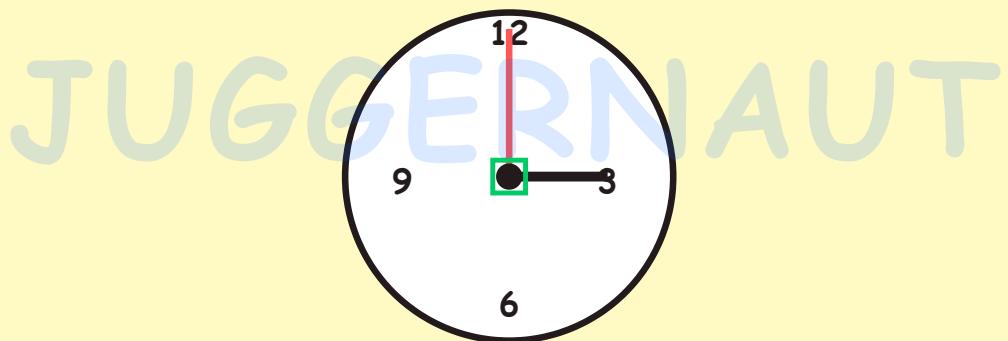
19. Look at this pattern and answer:



a) What shape comes next? _____

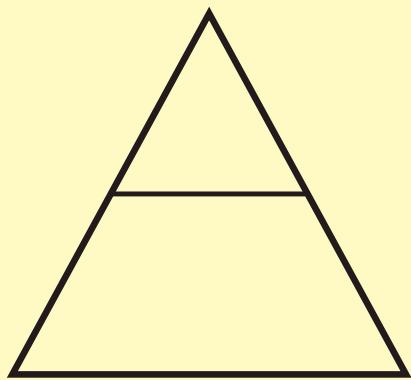
b) How many sides does it have? _____

20. A clock shows 3:00. What type of angle do the hour and minute hands make?



Type of angle: _____

21. How many triangles can you find in this figure?



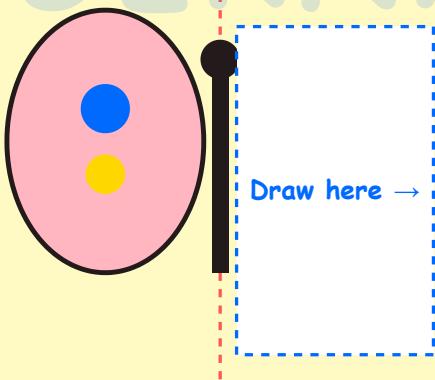
Hint: Count small, medium, and large triangles!

Total number of triangles: _____

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22. Complete the symmetrical butterfly by drawing the missing half:

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23. Solve the riddle:

I am a polygon with 4 sides.

All my sides are equal in length.

All my angles are right angles.

What shape am I?

Answer: _____

Draw the shape below:



24. Real-life Geometry! Look around your classroom or home and find:

- a) One object with parallel lines: _____
- b) One object shaped like a rectangle: _____
- c) One object that shows symmetry: _____
- d) One object with a right angle: _____



Answer Key

Part A: Warm-up Questions

1. 3 sides

2. Parallel lines (they never meet and are always the same distance apart)

3. True

4. Triangle

5. 4 corners

6. C) Square (a square has 4 right angles at each corner)

7. Pentagon

8. Student should draw a straight line with two endpoints labeled A and B

Part B: Practice Questions

9. a-ii (Right Angle), b-i (Acute Angle), c-iii (Obtuse Angle)

10. B) Butterfly (it has a vertical line of symmetry down the middle; the heart is also symmetrical)

11. True (all four sides of a rhombus are equal in length)

12. 6 vertices/corners

13. Obtuse Angle (it's larger than 90 degrees)

14. 4 sides and 4 corners

15. A (Letter A can be folded vertically down the middle and both halves match perfectly)

16. Student should draw two straight lines that never meet and are always the same distance apart

17. Any three of: Square, Rectangle, Rhombus, Parallelogram, Trapezium, Kite

18. 4 right angles (one at each corner of the rectangle)

Part C: Challenge Questions

19. a) Square, b) 4 sides (The pattern alternates: Triangle, Square, Triangle, Square...)

20. Right Angle (at 3:00, the hands form a perfect 90° angle)

21. 7 triangles (3 small triangles at the bottom, 2 medium triangles on sides, 2 triangles at top = 7 total. Count may vary based on interpretation.)

22. Student should draw a mirror image of the left wing on the right side - an ellipse with circles matching the left side

23. Square (Student should draw a square with 4 equal sides and 4 right angles)

24. Sample answers: a) Railway tracks, window blinds, ruled notebook; b) Door, book, table, whiteboard; c) Butterfly, face, leaf; d) Corner of a book, corner of a table, corner of a door (Answers will vary based on student's observation)

Scoring Guide

Total Questions: 24 | Total Marks: 24

Score Range	Performance Level	What to Do Next
20-24	 Excellent!	Outstanding performance! You've mastered geometry concepts. Next steps: Start learning about perimeter and area, explore more complex polygons (heptagon, octagon), practice measuring angles with a protractor, and learn about 3D shapes (prisms, pyramids).
15-19	 Very Good!	Great job! You understand geometry well. Focus on: Review the properties of different angles and polygons. Practice identifying symmetry in everyday objects. Draw more geometric shapes to improve accuracy. Study the differences between similar shapes (square vs. rhombus, rectangle vs. parallelogram).
10-14	 Good Effort!	Good start! You're learning geometry. Work on: Understanding the difference between parallel and intersecting lines. Learn the properties of basic polygons (triangle, quadrilateral, pentagon, hexagon). Practice recognizing right angles in your surroundings. Draw lines and shapes daily for 10-15 minutes.
0-9	Keep Trying!	Don't give up! Geometry takes practice. Start with: Learning one concept at a time - start with lines and angles. Use a ruler to draw straight lines. Look for shapes in your environment (window = rectangle, wheel = circle). Practice identifying corners and sides of shapes. Ask your teacher or parents for extra help with basic concepts.

Tips for Mastering Geometry:

- **Lines mastery:** Learn the difference between line, line segment, and ray. Practice drawing them with a ruler.

- **Understand angles:**
 - Right angle = 90° (like the corner of a book)
 - Acute angle = less than 90° (smaller opening)
 - Obtuse angle = more than 90° (bigger opening)
- **Polygon properties:** Remember that polygons are closed shapes. Count their sides: Triangle (3), Quadrilateral (4), Pentagon (5), Hexagon (6)
- **Symmetry practice:** Test for symmetry by imagining folding a shape in half. If both halves match perfectly, it's symmetrical!
- **Use tools:** Practice with a ruler for straight lines, set square for right angles
- **Geometry hunt:** Find geometric shapes and concepts in your daily life (parallel lines on a railway track, rectangles in doors and windows)
- **Draw regularly:** Practice drawing different shapes, angles, and patterns every day
- **Learn quadrilaterals:** Understand the family of 4-sided shapes:
 - Square: 4 equal sides, 4 right angles
 - Rectangle: Opposite sides equal, 4 right angles
 - Rhombus: 4 equal sides, angles not 90°
 - Parallelogram: Opposite sides equal and parallel

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