Unit 9 · Geometry, Angles, and Symmetry Cheat Sheet

Unit 9 focus: lines, rays, angles and measuring angles

1 Big Idea

An angle is made by two rays with the same endpoint. Angles are measured in degrees: a full turn is 360°.

2 Important Vocabulary

ray	Part of a line with one endpoint that goes on forever in one direction.	A beam of light
right angle	An angle that measures exactly 90°. It makes a square corner.	The corner of a square
acute angle	An angle that measures less than 90°.	45°
obtuse angle	An angle that measures more than 90° and less than 180°.	120°

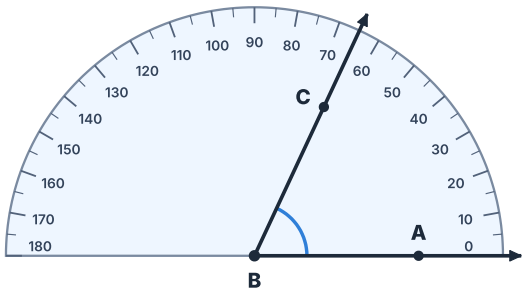
3 How It Works

A right angle is split into two angles. One measures 35°. Find the other.

Example: The parts add up to 90°.
Equation: 35 + x = 90
Subtract: 90 − 35 = 55

Answer: 55°

4 Visual Model



One ray points to 0°. The other ray crosses the scale at 65°, so the angle measures 65°.

5 ★ Remember This · Watch Out!

★ Remember this

- Acute: less than 90°. Right: exactly 90°. Obtuse: between 90° and 180°.
- Angle measures add: the parts make the whole.

⚠ Watch out!

- **Read the correct scale:** start from the 0° on your first ray
- **Ray length does not matter:** only the amount of turn matters

6 Try It!

1. An angle turns through $\frac{1}{4}$ of a circle. What is its measure?
   Answer: ₀06
2. Angles of 40° and 75° share a ray and do not overlap. What is the total?
   Answer: ₀SII

Answers are printed upside down. Turn the page to check!

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More practice: classifying shapes and lines of symmetry

1 Big Idea

Classify shapes by their sides and angles: parallel sides, perpendicular sides, and the sizes of the angles.

2 Important Vocabulary

parallel lines	Lines that never cross and stay the same distance apart.	Railroad tracks
perpendicular lines	Lines that cross to make right angles.	The lines in a plus sign
line of symmetry	A line that divides a figure into two matching parts.	A square has 4 lines of symmetry
protractor	A tool for measuring angles in degrees.	Line up one ray with 0°

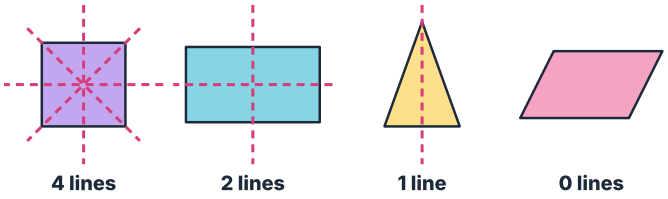
3 How It Works

A quadrilateral has 2 pairs of parallel sides and 4 right angles. Its sides are not all equal. Name it.

Example: Check each property.
2 pairs of parallel sides: parallelogram family
4 right angles: rectangle
Sides not all equal: not a square

Answer: rectangle

4 Visual Model



A line of symmetry folds a figure into two matching parts.

5 ★ Remember This · Watch Out!

★ Remember this

- Right triangle: one right angle. Acute triangle: three acute angles. Obtuse triangle: one obtuse angle.
- Fold test: if the two halves match exactly, the fold is a line of symmetry.

⚠ Watch out!

- **Not every line through the middle works:** the diagonal of a rectangle is not a line of symmetry
- **Parallel is not perpendicular:** parallel lines never meet; perpendicular lines make right angles

6 Try It!

1. A triangle has angles 30°, 60° and 90°. What kind of triangle is it?
   Answer: right triangle
2. How many lines of symmetry does a regular hexagon have?
   Answer: 6

Answers are printed upside down. Turn the page to check!