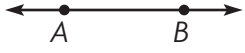
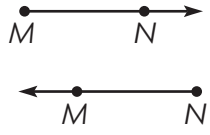
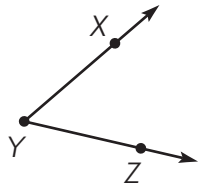
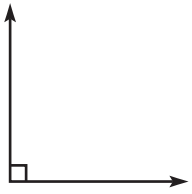
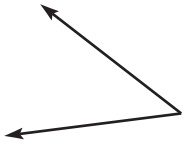
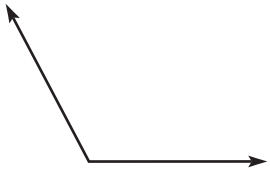
Lines, Rays, and Angles

Name	What it looks like	Think
point *D*		A **point** names a location in space.
line *AB*; $\overleftrightarrow{AB}$ line *BA*; $\overleftrightarrow{BA}$		A **line** extends without end in opposite directions.
line segment *AB*; $\overline{AB}$ line segment *BA*; $\overline{BA}$		"Segment" means part. A **line segment** is part of a line. It is named by its two endpoints.
ray *MN*; $\overrightarrow{MN}$ ray *NM*; $\overrightarrow{NM}$		A **ray** has one endpoint and extends without end in one direction. A ray is named using two points. The endpoint is always named first.
angle *XYZ*; $\angle XYZ$ angle *ZYX*; $\angle ZYX$ angle *Y*; $\angle Y$		Two rays or line segments that share an endpoint form an angle. The shared point is the vertex of the angle.

A **right angle** forms a square corner.	An **acute angle** opens less than a right angle.	An **obtuse angle** opens more than a right angle and less than a straight angle.	A **straight angle** forms a line.
			

Draw and label an example of the figure.

1. $\overline{PQ}$

2. $\overrightarrow{KJ}$

3. obtuse $\angle FGH$

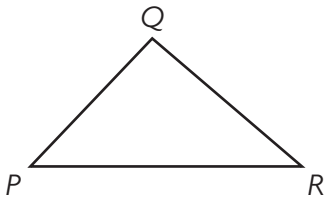
Name _____

Classify Triangles by Angles

A **triangle** is a polygon with 3 sides and 3 angles.
Each pair of sides joins at a vertex.

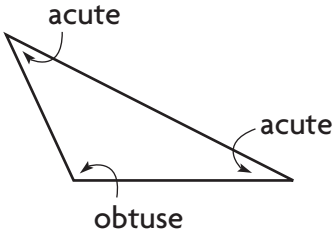
You can name a triangle by its vertices.

ΔPQR ΔQRP ΔRPQ
ΔPRQ ΔQPR ΔRQP

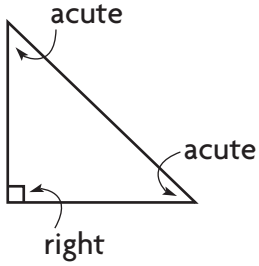


There are 3 types of triangles. All triangles have at least 2 acute angles.

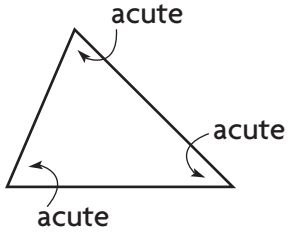
Obtuse triangle
one obtuse angle



Right triangle
one right angle

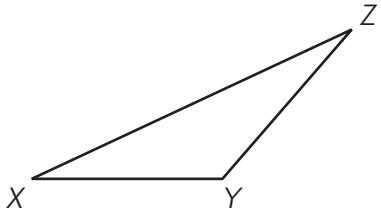


Acute triangle
three acute angles



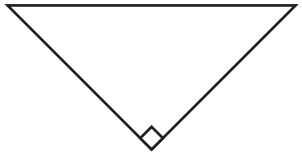
1. Name the triangle. Tell whether each angle is *acute*, *right*, or *obtuse*. A name for the triangle is _____.

$\angle X$ is _____.
$\angle Y$ is _____.
$\angle Z$ is _____.



Classify each triangle. Write *acute*, *right*, or *obtuse*.

2.



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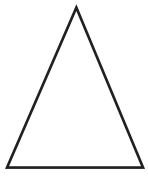
3.



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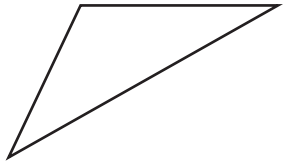
4.



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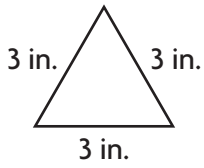
Name _____

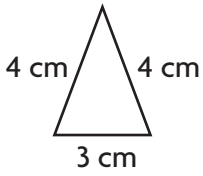
Classify Triangles by Sides

One way to classify triangles is to compare the lengths of their sides.

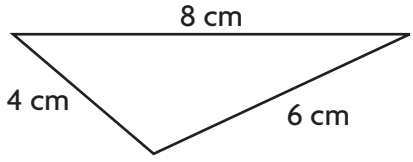
First, decide how many sides of the triangle are the same length. Then classify the triangle based on the number.



equilateral triangle
3 sides
have the same length



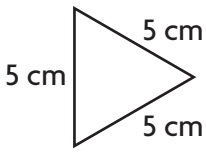
isosceles triangle
2 sides
have the same length



scalene triangle
no sides
have the same length

Name the triangle. Write *equilateral, isosceles,* or *scalene*.

1.



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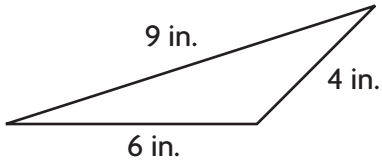
2.



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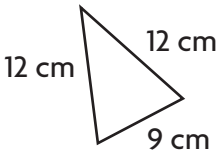
3.



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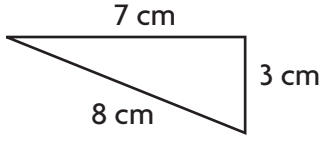
4.



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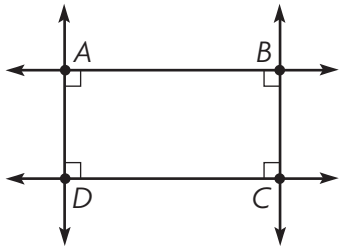
Name _____

Parallel Lines and Perpendicular Lines

Parallel lines are lines in a plane that are always the same distance apart. Parallel lines or line segments never meet.

In the figure, lines *AB* and *CD*, even if extended, will never meet. The lines are parallel. Write $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$.
Lines *AD* and *BC* are also parallel. So, $\overleftrightarrow{AD} \parallel \overleftrightarrow{BC}$.

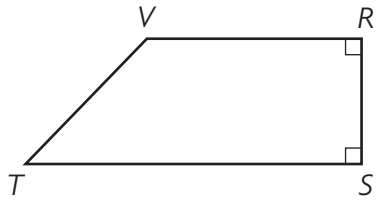


Intersecting lines cross at exactly one point. Intersecting lines that form right angles are **perpendicular.**

In the figure, lines *AD* and *AB* are perpendicular because they form right angles at vertex *A*. Write $\overleftrightarrow{AD} \perp \overleftrightarrow{AB}$.

Lines *BC* and *CD* are also perpendicular. So, $\overleftrightarrow{BC} \perp \overleftrightarrow{CD}$.

Use the figure for 1–3.



1. Name two sides that appear to be parallel.

_____

2. Name two sides that appear to be perpendicular.

_____

3. Name two sides that appear to be intersecting, but not perpendicular.

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