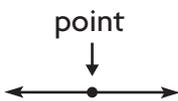
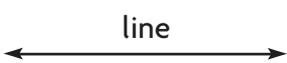
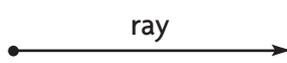


Name _____

Describe Plane Shapes

You can use math words to describe plane shapes.

	an exact position or location
	a straight path that goes in two directions without end
	points that are used to show segments of lines
	part of a straight line and has 2 endpoints
	part of a straight line that has 1 endpoint and continues in one direction

A **plane shape** is a shape on a flat surface. It is formed by points that make curved paths, line segments, or both. Plane shapes can be open or closed.

A **closed shape** starts and ends at the same point.



An **open shape** does not start and end at the same point.

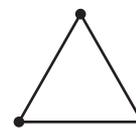


Look at this plane shape called a triangle.

It is a **closed shape**.

It has **3 line segments**.

The line segments meet at the **endpoints**.



Circle all the words that describe the shape.



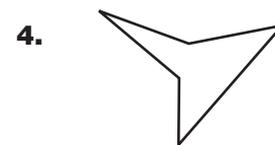
line
line segment



point
ray



closed shape
open shape



closed shape
open shape

Write whether the shape is **open** or **closed**.







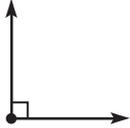


Name _____

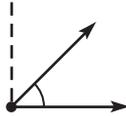
Describe Angles in Plane Shapes

There are different types of angles.

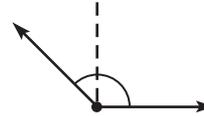
A **right angle** forms a square corner.



Some angles are less than a right angle.



Some angles are greater than a right angle.

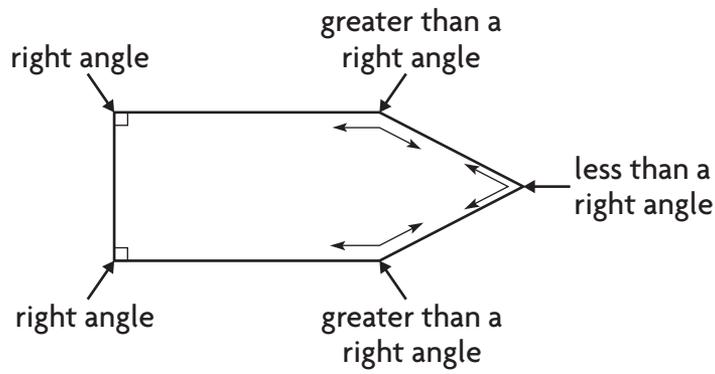


Look at this shape.
Describe the angles.

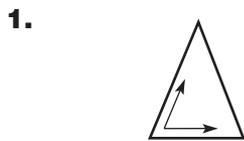
There are **2** right angles.

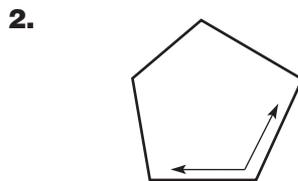
There are **2** angles greater than a right angle.

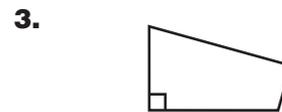
There is **1** angle less than a right angle.



Use the corner of a sheet of paper to tell whether the angle is a **right angle**, **less than a right angle**, or **greater than a right angle**.



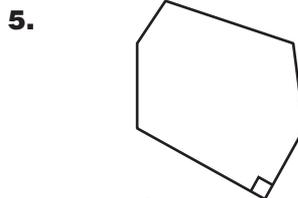




Write how many of each type of angle the shape has.



___ right
___ less than a right
___ greater than a right



___ right
___ less than a right
___ greater than a right

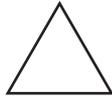


___ right
___ less than a right
___ greater than a right

Name _____

Identify Polygons

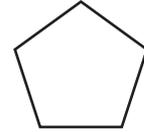
You can identify and name polygons by the number of sides and angles they have.



3 sides
3 angles
triangle



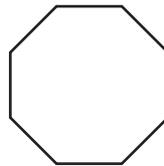
4 sides
4 angles
quadrilateral



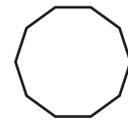
5 sides
5 angles
pentagon



6 sides
6 angles
hexagon



8 sides
8 angles
octagon



10 sides
10 angles
decagon

Describe and name this shape.

It has 4 sides.

It has 4 angles.

It is a **quadrilateral**.

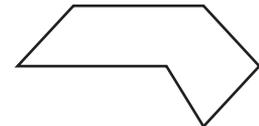


Describe and name this shape.

It has 6 sides.

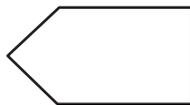
It has 6 angles.

It is a **hexagon**.



Write the number of sides and the number of angles. Then name the polygon.

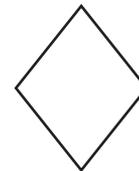
1.



_____ sides

_____ angles

2.



_____ sides

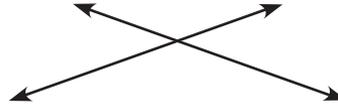
_____ angles

Name _____

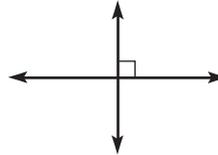
Describe Sides of Polygons

There are different types of line segments in polygons.

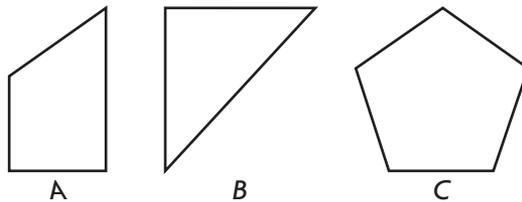
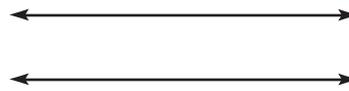
• **Intersecting lines** are lines that cross or meet. Intersecting lines form angles.



• **Perpendicular lines** are intersecting lines that cross or meet to form right angles.



• Lines that appear never to cross or meet and are always the same distance apart are **parallel lines**. They never form angles.

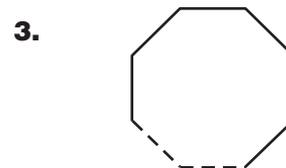
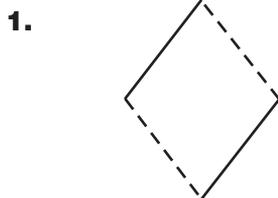


Which shape or shapes appear to have parallel sides? **A**

Which shape or shapes appear to have perpendicular sides? **A, B**

Which shape or shapes appear to have intersecting sides? **A, B, C**

Look at the dashed sides of the polygon. Tell if they appear to be *intersecting*, *perpendicular*, or *parallel*. Write all the words that describe the sides.



Name _____

Classify Quadrilaterals

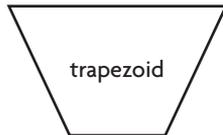
You can classify quadrilaterals by their sides and by their angles.



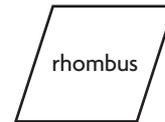
- 2 pairs of opposite sides that are parallel
- 4 sides that are of equal length
- 4 right angles



- 2 pairs of opposite sides that are parallel
- 2 pairs of sides that are of equal length
- 4 right angles



- 1 pair of opposite sides that are parallel
- lengths of sides could be the same.



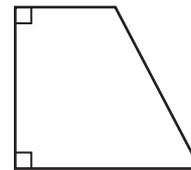
- 2 pairs of opposite sides that are parallel
- 4 sides that are of equal length

How can you classify the quadrilateral?

It has only 1 pair of opposite sides that are **parallel**.

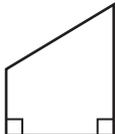
The lengths of all 4 sides are **not equal**.

So, the quadrilateral is a **trapezoid**.



Circle all the words that describe the quadrilateral.

1.



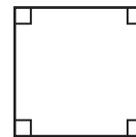
- square
- rhombus
- trapezoid

2.



- square
- rectangle
- quadrilateral

3.



- square
- rectangle
- rhombus

Name _____

Draw Quadrilaterals

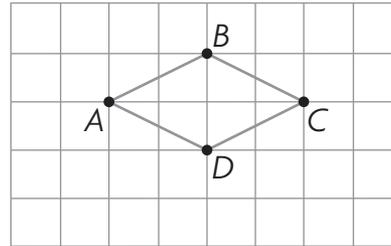
Use grid paper to draw a quadrilateral.

Step 1 Use a ruler to draw line segments.
Connect *A* to *B*.

Step 2 Connect *B* to *C*.

Step 3 Connect *C* to *D*.

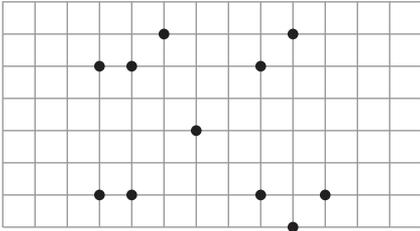
Step 4 Connect *D* to *A*.



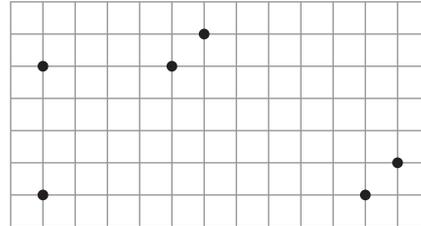
Write the name of your quadrilateral.

rhombus

1. Choose four endpoints that connect to make a square.

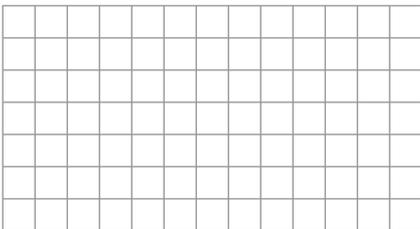


2. Choose four endpoints that connect to make a trapezoid.

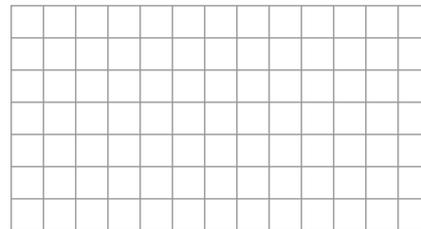


Use grid paper to draw a quadrilateral that is described.
Name the quadrilateral you drew.

3. 4 right angles



4. 2 pairs of opposite sides that are parallel

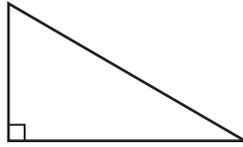


Name _____

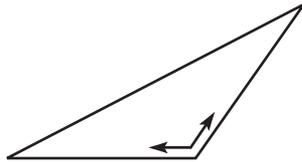
Describe Triangles

You can describe a triangle by its types of angles.

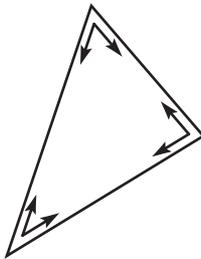
This triangle has **1** right angle.



This triangle has **1** angle greater than a right angle.

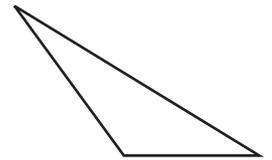


This triangle has **3** angles less than a right angle.

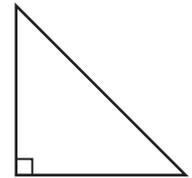


You can describe a triangle by the number of sides of equal length.

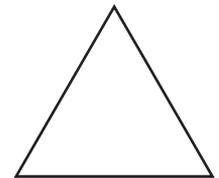
This triangle has **0** sides of the same length.



This triangle has **2** sides of the same length.



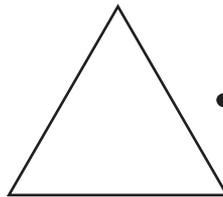
This triangle has **3** sides of the same length.



Draw a line to match the description of the triangle(s).

1. One angle is a right angle.

•

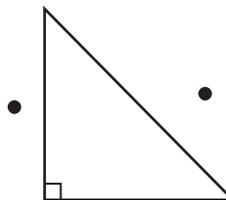


4. No sides are equal in length.

•

2. One angle is greater than a right angle.

•

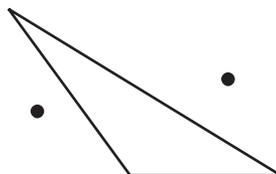


5. Two sides are equal in length.

•

3. Three angles are less than a right angle.

•



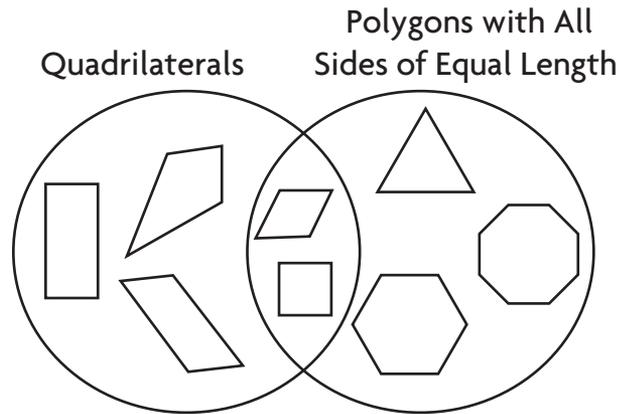
6. Three sides are equal in length.

•

Name _____

Problem Solving • Classify Plane Shapes

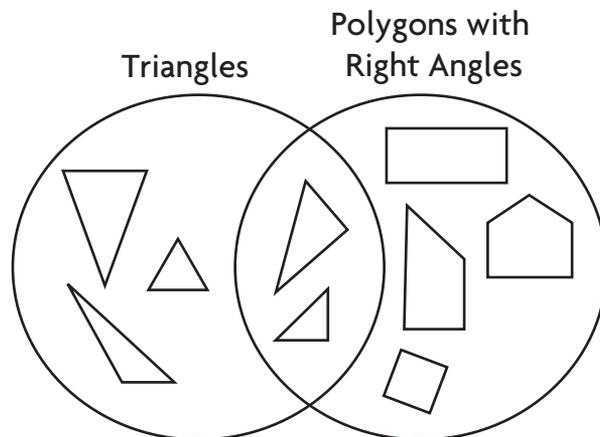
A **Venn diagram** shows how sets of things are related. This Venn diagram shows how quadrilaterals and polygons with all sides of equal length are related. The shapes in the section where the circles overlap show shapes that belong to both groups.



What types of polygons are in both circles?

Read the Problem	Solve the Problem
<p>What do I need to find? what types of polygons are in both circles</p>	<p>What is true about all polygons in the circle labeled Quadrilaterals? <u>They all have 4 sides.</u></p>
<p>What information do I need to use? The circles are labeled <u>Quadrilaterals</u> and <u>Polygons with All Sides of Equal Length</u></p>	<p>What is true about all polygons in the other circle? <u>They all have sides of equal length.</u></p>
<p>How will I use the information? I will describe the shapes in the section where the circles overlap</p>	<p>Which polygons are in the section where the circles overlap? <u>shapes that are quadrilaterals and that have 4 sides that are of equal length</u> So, <u>a square</u> and <u>a rhombus</u> are in the section where the circles overlap.</p>

1. Brad drew the Venn diagram at the right. What type of shapes are in the section where the circles overlap?



Name _____

Relate Shapes, Fractions, and Area

You can separate a plane shape into equal parts to explore the relationship between fractions and area.

Divide the rectangle into 6 parts with equal area. Write the fraction that names the area of each part of the whole.

Step 1 Draw lines to divide the rectangle into 6 parts with equal area. Use the grid to help you.

Step 2 Write the fraction that names each part of the divided whole.

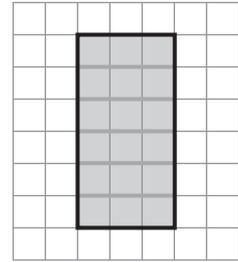
Think: Each part is 1 part out of 6 equal parts.

Each part is $\frac{1}{6}$ of the whole shape's area.

Step 3 Write the fraction that names the whole area.

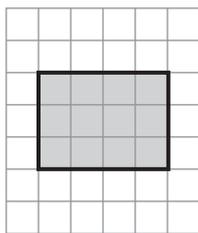
Think: There are 6 equal parts.

The fraction that names the whole area is $\frac{6}{6}$.



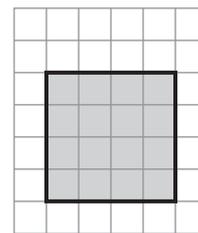
Draw lines to divide the shape into parts with equal area. Write the area of each part as a unit fraction.

1. 4 equal parts



Each part is _____ of the whole shape's area.

2. 8 equal parts



Each part is _____ of the whole shape's area.