

Geometry

Name: Ky
Date: _____

Guided Notes – Introduction to Geometry

What do you remember about Geometry?

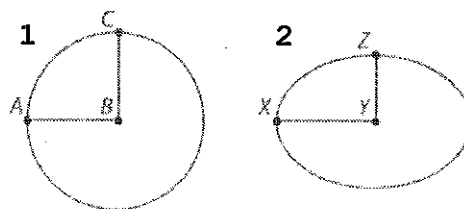
- 90 1. What is the measure of a right angle?
- 4 2. How many lines of symmetry does a square have?
- circle 3. What geometric figure has an infinite number of lines of symmetry?

Let's define some of the important geometry terms...

A **circle** is the set of points on a plane at a certain distance, or radius, from a single point, the center. Notation: OB

Which figure accurately represents a circle? Why?

1 → It is perfectly round with equal radii



A **line** is an infinite set of points that extend in both directions.

Notation: ↔ AB

A **line segment** is a part of a line bounded by two distinct endpoints.

Notation: AB

Which figure accurately represents a line? Why? 2



Which figure accurately represents a line segment? Why? 1



A **point** is an exact position or location in a given plane.

Notation: A

What does C represent in the figure?

C is point

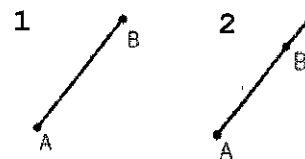


A **ray** is a portion of a line that starts at a endpt and continues to infinity.

Notation: → AB

Which figure accurately represents a ray? Why?

2



An **angle** is formed where two segments or rays share an endpt, or where a line intersects with another line, ray or line segment.

Which figure accurately represents an angle? Why?

1



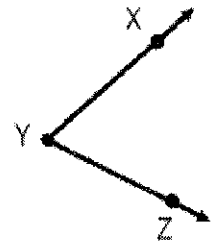
Notation: An angle is named using 1 letter or 3 letters.

Give three possible names for the angle to the right. $\angle Y$ OR $\angle ZYX$ OR $\angle XYZ$

Remember: Acute angles measure less than 90° .

Obtuse angles measure greater 90° .

Right angles measure equal 90° .



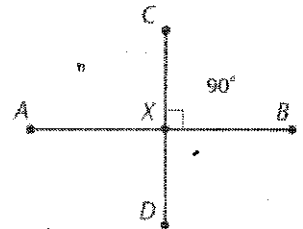
Perpendicular lines create four right angles.

Notation: \perp

What are the measures of $\angle AXC$, $\angle DXA$, and $\angle BXD$ if $AB \perp CD$?

90°

$AB \perp CD$

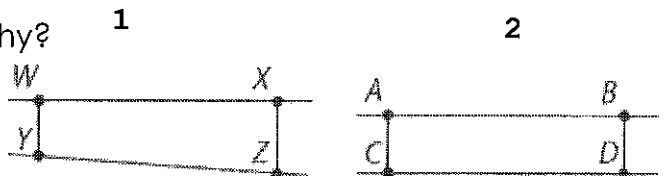


Parallel lines are two lines that have unique points and never cross.

Notation: \parallel

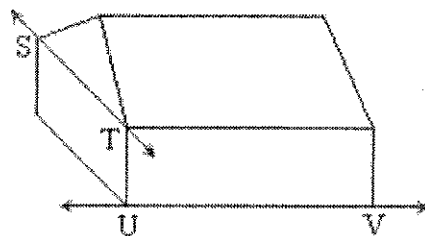
Which figure accurately represents parallel lines? Why?

$AB \parallel CD$



Skew lines are lines that do not intersect and that are not parallel.

An example of skew lines are on the right. Lines \overleftrightarrow{ST} and \overleftrightarrow{UV} are skew lines.



Collinear points are three or more points that lie on the same line.

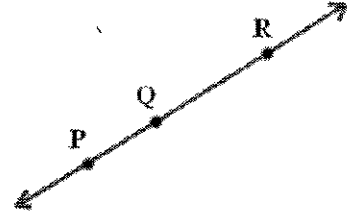
Coplanar points are three or more points that lie in the same plane.

Which points are collinear?

P, Q, R

Which points are coplanar?

A, B, C, D



Practice

Math Teachers Unite contracted Josh's Icons to design a logo for their group. They requested the logo be circular and contain the following elements: a line, a ray, a line segment, two pairs of parallel line segments and one pair of perpendicular line segments.

Here is what Josh's Icons proposed back to Math Teachers Unite. Did Josh's Icons meet their requirements? How do you know?

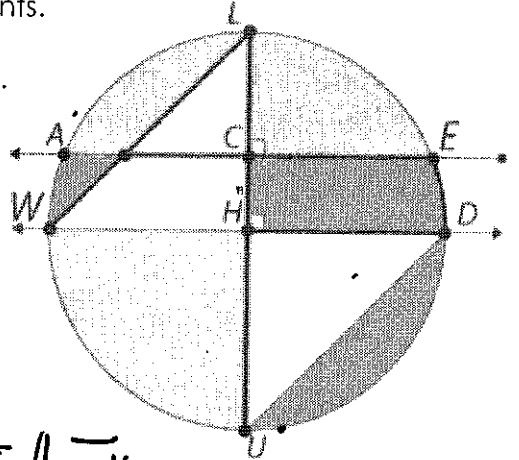
Line: WD

Ray: HD

Line Segment: CD

One pair of perpendicular line segments: LH ⊥ HD

Two pairs of parallel line segments: CE || HD and AC || WH

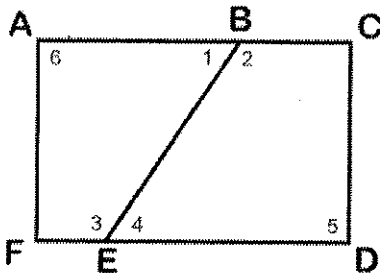


Fill in the blanks with the appropriate definition and notation.

	<u>definition</u>	<u>notation</u>
1. Parallel Lines	<u>D</u>	<u>1</u>
2. Line Segment	<u>A</u>	<u>4</u>
3. Circle	<u>E</u>	<u>3</u>
4. Point	<u>G</u>	<u>7</u>
5. Perpendicular Lines	<u>F</u>	<u>2</u>
6. Ray	<u>C</u>	<u>5</u>
7. Angle	<u>B</u>	<u>b</u>

A. part of a line bounded by two distinct endpoints	
B. formed where two lines or rays share an endpoint	
C. a portion of a line that starts at a point and continues to infinity	
D. two lines that have unique points and never cross	
E. the set of points on a plane at a certain distance, or radius from a single point, the center	
F. creates four right angles	
G. an exact position or location in a given plane	
1. $AB \parallel CD$	2. $AB \perp CD$
3. $\odot B$	4. \overline{AB}
5. \overrightarrow{AB}	6. $\angle ABC$
7. A	

Name the following angles with the correct notation.



8. $\angle 1$ $\angle EBA$ 9. $\angle 2$ $\angle CBE$ 10. $\angle 3$ $\angle FEB$
 11. $\angle 4$ $\angle BED$ 12. $\angle 5$ $\angle EDC$ 13. $\angle 6$ $\angle FAB$

14. Johnny wants to draw a perfect circle on canvas, but his compass is broken. He decides to take a shoelace from one of his sneakers and a pushpin from his drawing desk. He ties the shoelace around a pencil and then pins the other end of the shoelace into the center of the canvas. Johnny then stretches the shoelace out until it's pulled tight, and places the pencil point on the canvas. Keeping the shoelace straight, he moves the pencil around the canvas and begins to draw out a circle.

Will Johnny's approach to drawing a perfect circle work? Why or why not?

As long as the shoelace is pulled tight so the radius stays the same.