

EQ: Why are precise definitions important?

Goals for today:

Determine precise
definitions

Discuss the importance of
precise definitions

Quick review of precise definitions.

Point – A specific location in space, often represented by a dot _____

capital letter
P •
point P

Line – A straight pathway that is endless in both directions, has no thickness, and is comprised of points.



Line Segment – A straight line which links two points without extending beyond them.

\overline{AB}



Ray – A part of a line that starts at an endpoint and extends forever in one direction.



Angle – A figure formed by two rays with a common endpoint called a vertex.

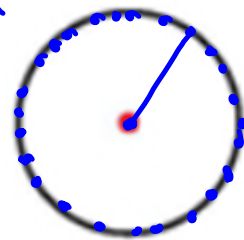
$\angle A$ or $\angle CAB$ or $\angle BAC$



Circle – The set of points in a plane that are a fixed distance from a given point called the center of the circle.



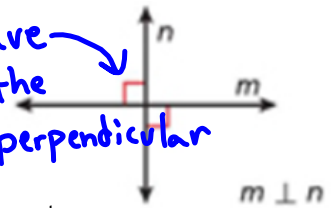
radius



Perpendicular lines – Lines that intersect at 90 degree angles.

$m \perp n$
Read as "m is perpendicular to n"

must have
to know the
lines are perpendicular



Parallel Line – Lines in the same plane that do not intersect.

$r \parallel s$
Read as "r is parallel to s"



must have to
know lines are
parallel.

It is important that you not only know the definitions, but that you are able to identify what makes an imprecise definition incorrect.

Why is it wrong?

A straight pathway that is endless in both directions, has ~~thickness of quantity 1.~~

A line has no thickness

A set of points in a plane ~~that form a round figure.~~

Missing that the set of points are the same distance from the given center.

A straight line with points at both ends

Does not clearly define a line segment because it does not specify that the line does not extend beyond the points

Two lines in one plane that extend on forever.

Needs to specify that the lines do not intersect for them to be parallel.

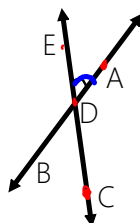
Lines that intersect at a specific point.

Needs to specify that they intersect at 90° angles to be perpendicular

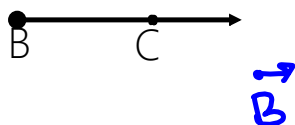
Definitions Extended

1. Write 2 names for the marked angle.

$\angle ADE$ or $\angle EDA$



2. Identify and give it a name.



3. Are the lines shown parallel? How do you know?



No they are not marked as parallel so we cannot assume they are.

Acute Angle - angles with a measure $0^\circ < \theta < 90^\circ$



Right Angle - angles with a measure $\theta = 90^\circ$



Obtuse Angle - angles with a measure $90^\circ < \theta < 180^\circ$



Straight Angle - angles with a measure $\theta = 180^\circ$



Using the given figure, name an angle that matches the type given.

1. Acute Angle

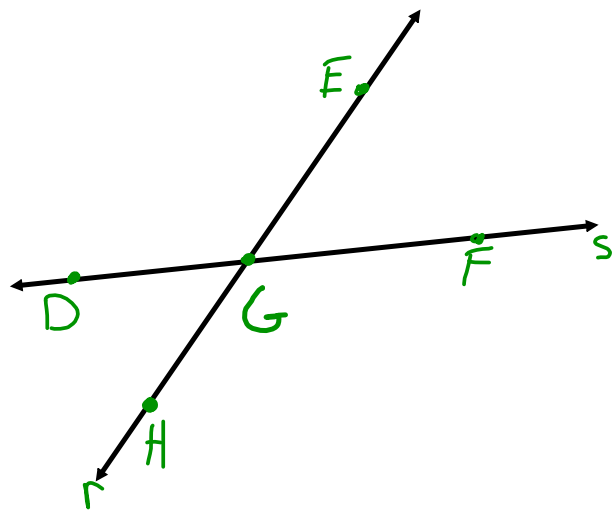
$\angle EGF$ or $\angle DGH$

2. Obtuse Angle

$\angle DGE$ or $\angle FGH$

3. Straight Angle

$\angle DGF$ or $\angle HGE$



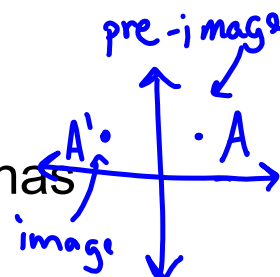
Next, we will review the definitions of the transformations we will be dealing with.

Transformations: Vocabulary

Pre-image - The original figure prior to a transformation. A

Image - The figure after a transformation has occurred. $A' \leftarrow$ Read as A prime

Transformation - a change in the position, size, or shape of a figure. A transformation maps the preimage to the image.



Translation - a transformation in which all the points of a figure move the same distance in the same direction.

Rotation - A transformation about a point P , such that each point and its image are the same distance from P .

Reflection - A transformation across a line, called the line of reflection. Each point and its image are the same distance from the line of reflection.

Dilation - A transformation that changes the size of a figure but not its shape.

Rigid Motion - A transformation of the plane or space, which preserves distance and angles.

(AKA Isometry) - Translation, Reflection, Rotation, Dilation

Transformations Activity

Given triangle ABC complete each given transformation and record the coordinates for the image $A'B'C'$

Once finished with the transformations, answer the questions on the back