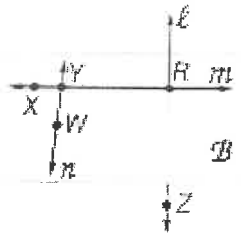
Objectives:

- Student will be able to identify and model points, lines, and planes, midpoints, rays, and line segments.

Example:

1. Use the figure to name each of the following:
   a. a line containing point X



   $\overleftrightarrow{YB}$

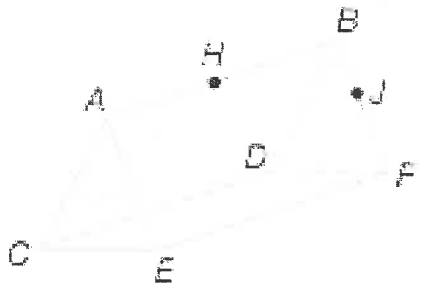
   b. a line containing point Z

   $\overleftrightarrow{RZ}$

   c. a plane containing points W and R

   plane B

2. Refer to the figure to answer the following:



   a. How many planes are shown in the figure?

   5

   b. Name three points that are collinear.

   points A, H, B

   points B, J, F

   c. Are points A, H, J, and D coplanar? Explain

   no b/c A, H, and D are in 1 plane and A, H, J are in another

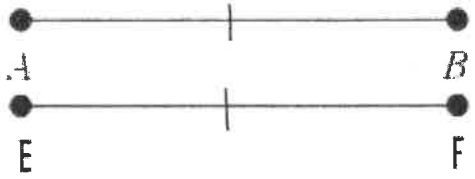
   d. Are points B, D, and F coplanar? Explain

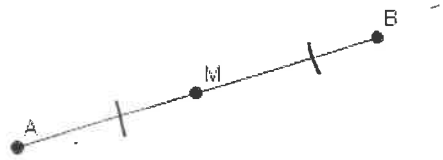
   yes

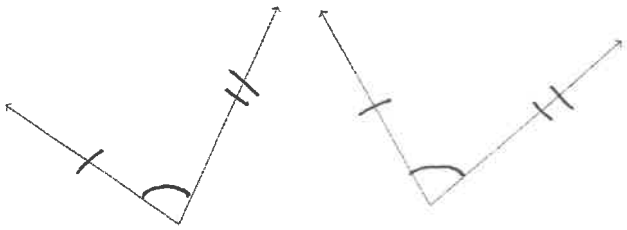
3. What is the difference between congruence and equal?

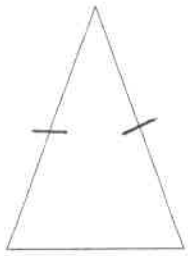
use w/ figures
$\cong$
$\overline{AB} \cong \overline{CD}$

use w/ #'s
$=$
$x = 2$

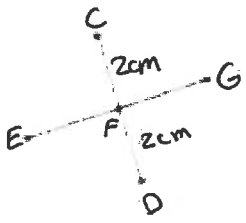






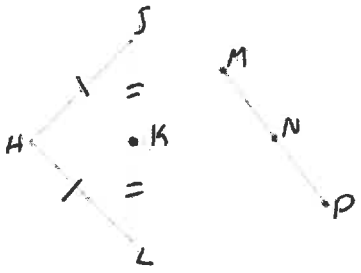


4. Use the figure below for the following questions
   a. Name each midpoint and the segment it bisects.
   b. Name all the congruent segments. Use the congruence symbol to write your answers.



midpoint F
bisects $\overline{CD}$

$\overline{CF} \cong \overline{FD}$

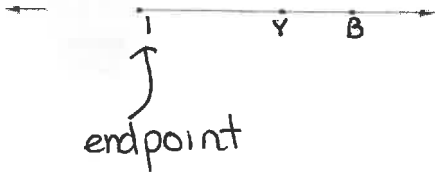


midpoint K
bisects $\overline{JL}$

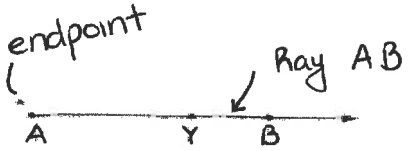
$\overline{JK} \cong \overline{KL}$
$\overline{HJ} \cong \overline{HL}$

cant say anything b/c no markings

Ray



its like covering over part of a line



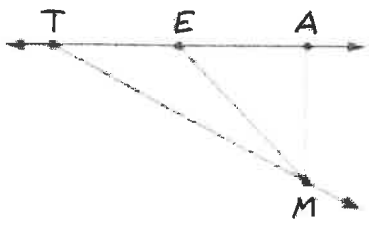
Ray AB or $\overrightarrow{AB}$

NOT ~~$\overrightarrow{BA}$~~

Investigate!

1. Around the classroom

2.



3. In your own words define each of these vocab words that we have learned today.

Algebra Skills!

Midpoint:

the point on a segment that is the same distance from both end points

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = (x_M, y_M)$$

1. Find the coordinates of the midpoint given the following endpoints:
   a. (12, -7) and (-6, 15)
   $x_1\ y_1 \quad x_2\ y_2$

$$\left(\frac{12 + (-6)}{2}, \frac{-7 + 15}{2}\right)$$

$$\left(\frac{6}{2}, \frac{8}{2}\right)$$

$$(3, 4)$$

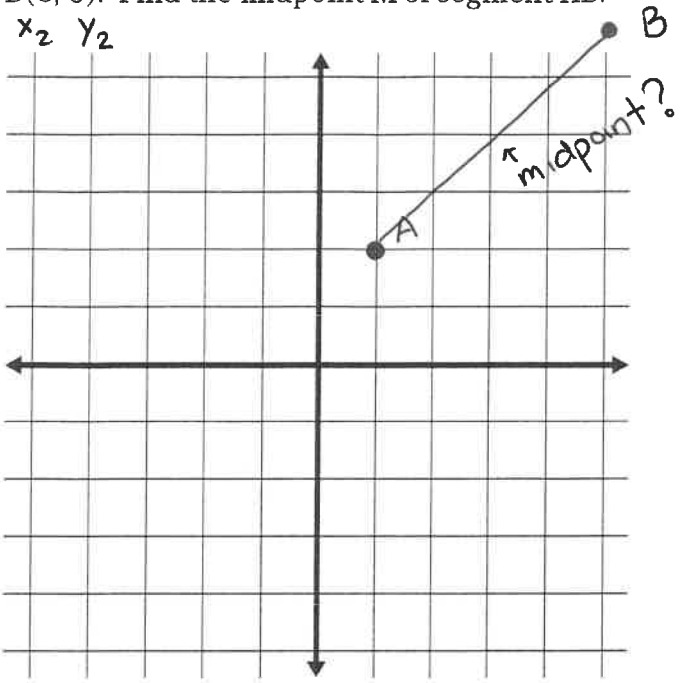
   b. (-17, -8) and (-1, 11)
   $x_1\ y_1 \quad x_2\ y_2$

$$\left(\frac{-17 + (-1)}{2}, \frac{-8 + 11}{2}\right)$$

$$\left(\frac{-18}{2}, \frac{3}{2}\right)$$

$$(-9, 3/2)$$

2. Use the coordinate plane below to plot the following points, A(1, 2) and B(5, 6). Find the midpoint M of segment AB.



x_1 y_1

$$\left(\frac{1+5}{2}, \frac{2+6}{2}\right)$$

$$\left(\frac{6}{2}, \frac{8}{2}\right)$$

$$(3, 4)$$