GOOD MORNING!!

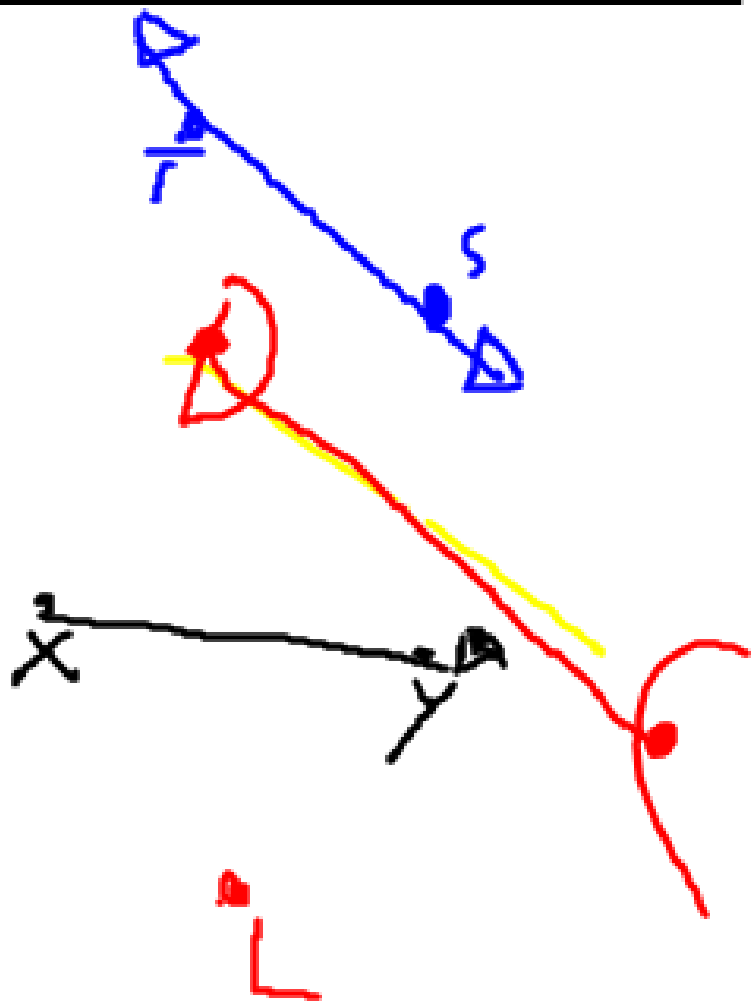
Draw Each of the Following...

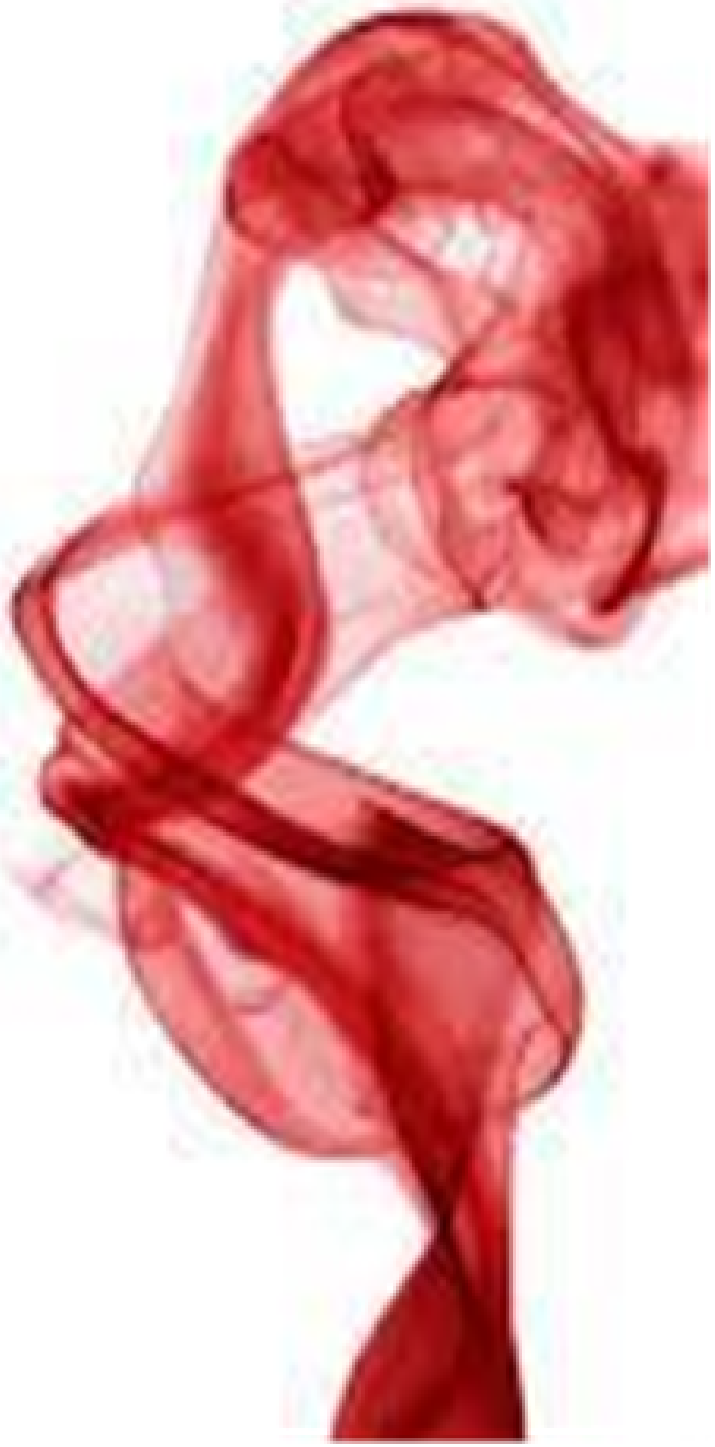
$\overleftrightarrow{TS}$

$\overline{DC}$

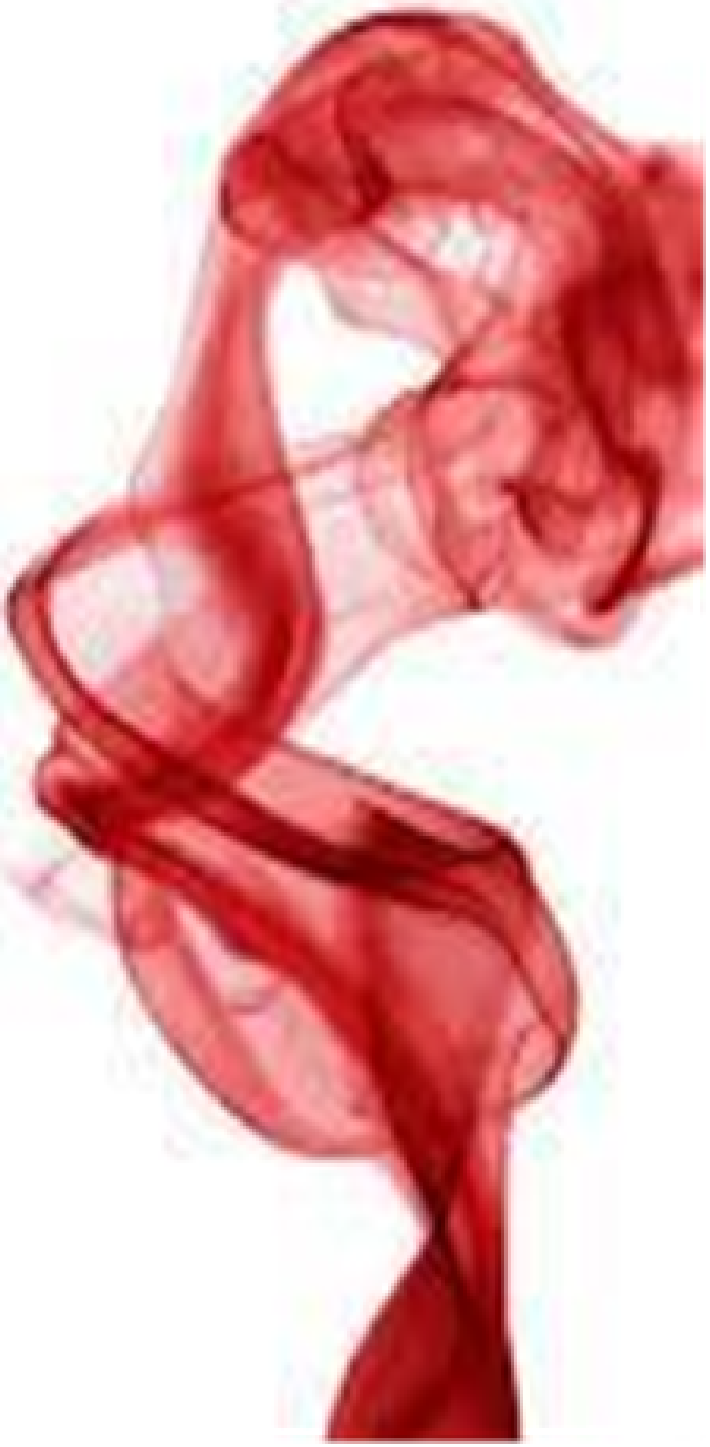
$\overrightarrow{XY}$

Point L





Homework...?



Sections 1.2 & 1.3

Segment Congruences
Midpoint & Distance Formulas

A **Postulate or Axiom** is a rule that is accepted without proof

A **Theorem** is a rule that can be proved.

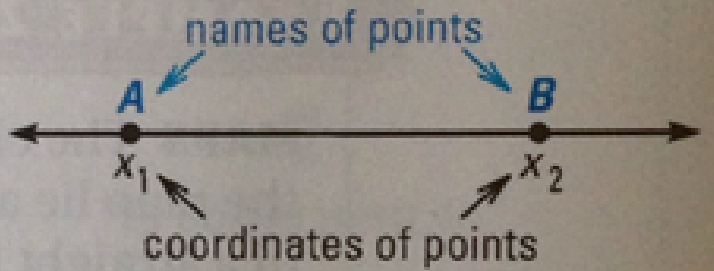
Congruent Segments are Line Segments that have the same length.

The symbol $\cong$ is used to represent congruence.

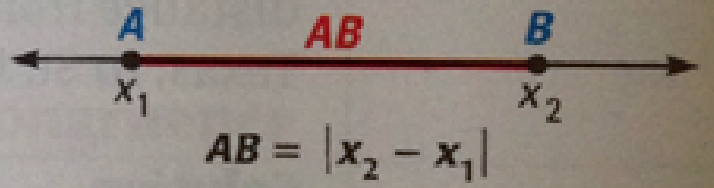
POSTULATE — For Your Notebook

POSTULATE 1 Ruler Postulate

The points on a line can be matched one to one with the real numbers. The real number that corresponds to a point is the **coordinate** of the point.



The **distance** between points A and B, written as AB, is the absolute value of the difference of the coordinates of A and B.

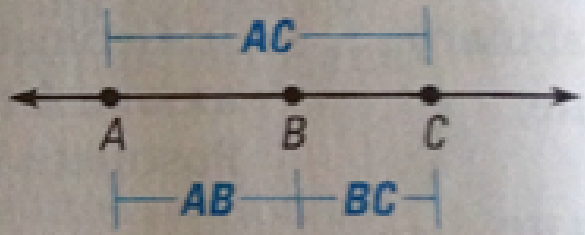


POSTULATE — For Your Notebook

POSTULATE 2 Segment Addition Postulate

If B is between A and C, then $AB + BC = AC$.

If $AB + BC = AC$, then B is between A and C.



EXAMPLES.....

#1. 

AB + BC = AC

24 + 13 = AC

AC = 37

#2. 

BE + ED = BD

12 + 5 = BD

BD = 17

#3. 

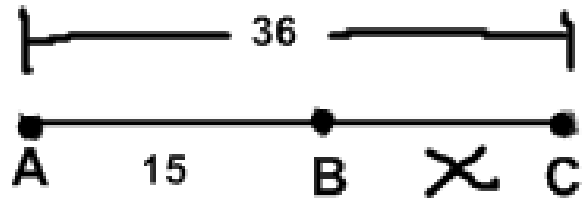
GE + ED = GD

20 + 6 = GD

GD = 26

EXAMPLES.....

#4.



AB + BC = AC

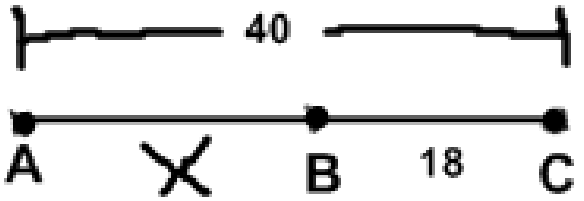
$15 + x = 36$

$-15 \quad -15$

$BC = 21$

$x = 21$

#5.



AB + BC = AC

$x + 18 = 40$

$-18 \quad -18$

$AB = 22$

$x = 22$

1.3 - Using Midpoint and Distance Formulas

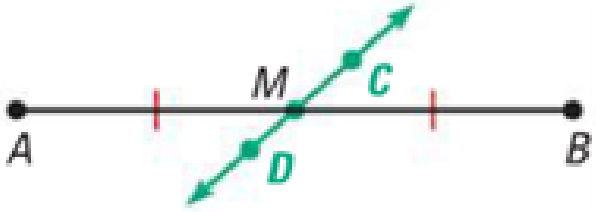
A Midpoint is a point that divides a line segment into 2 congruent segments.

M is the midpoint of $\overline{AB}$.
So, $\overline{AM} \cong \overline{MB}$ and $AM = MB$.

Marking a segment with a line signifies that they are congruent.

A Segment Bisector is a point, ray, line, line segment, or plane that intersects at its midpoint.

To *bisect* means to divide into two equal parts.



$\overleftrightarrow{CD}$ is a segment bisector of $\overline{AB}$.
So, $\overline{AM} \cong \overline{MB}$ and $AM = MB$.

Examples.....

Solve for each of the following...

#1.

VM = MW

MW = 20

#2.

VM = MW

$25 = x + 12$

$-12 \quad -12$

$13 = x$

MW = $x + 12$

$= 13 + 12$

$= 25$

MORE Examples.....

Solve for each of the following...

#3.

VM = MW

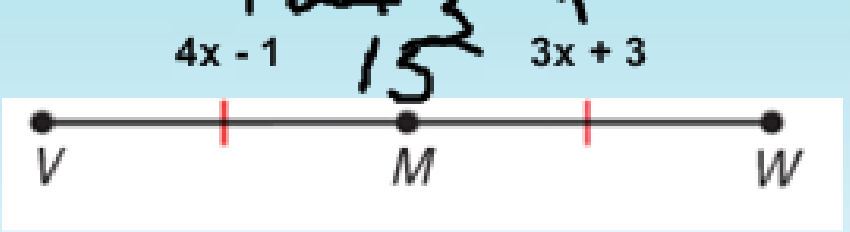
$15 = x + 10$

$-10 \quad -10$

$5 = x$

MW = 15

#4.



$3x+3$

$3(4)+3$

$12+3$

15

VM = MW

$4x - 1 = 3x + 3$

$+1 \quad +1$

$4x = 3x + 4$

$-3x \quad -3x$

$1x = 4$

$x = 4$

MW = 15

Work On Worksheet