

TH-G week 3

vowels in the days of the week.

Review

OA UEA EEA UA

$2, 6, 18, 54, 162$   
 $\swarrow \quad \swarrow \quad \swarrow \quad \swarrow$   
 $*3 \quad *3 \quad *3 \quad *3$

Rule:  $*3$

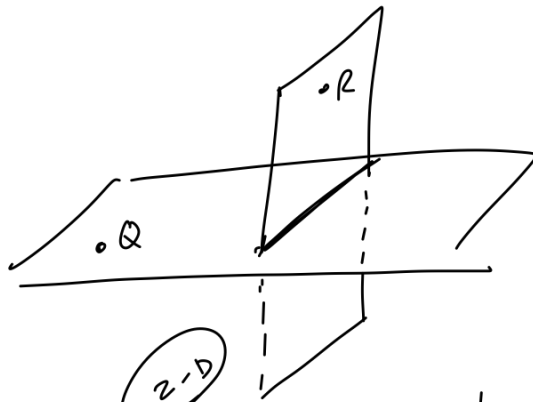
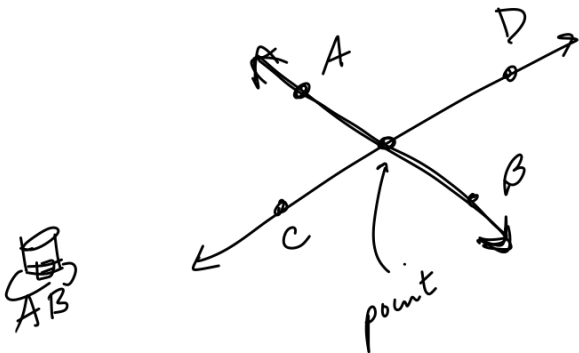
Next number:  $\begin{array}{r} 162 \\ \times 3 \\ \hline 486 \end{array}$

Two ways to define a plane:

- 1.) line + 1 noncollinear point
- 2.) 3 noncollinear points

Intersections

$\textcircled{1-D}$   
 2 lines intersect at a point  $\textcircled{0-D}$

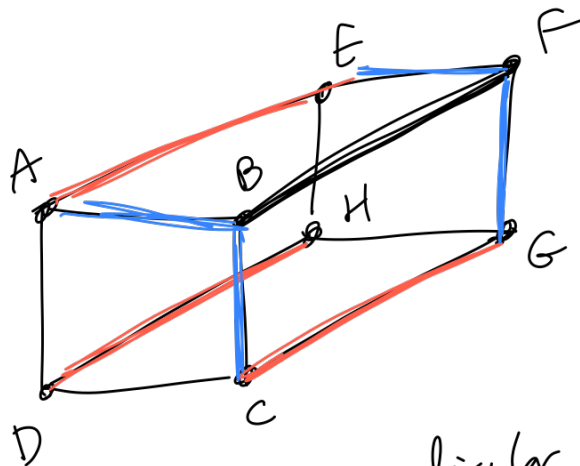


$\overleftrightarrow{AB}$  - line

$\overline{AB}$  - segment

$\overrightarrow{AB}$  - ray

$\textcircled{2-D}$   
 two planes intersect at a line  $\textcircled{1-D}$



BF

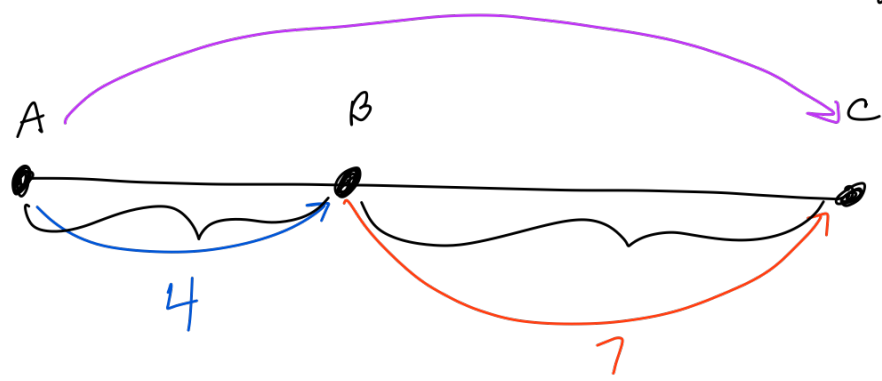
parallel lines  
AE, DH, CG

perpendicular  
intersection  
AB, EF, GF, BC

skew  
DC, AD, EH,  
HG

1-4 Measuring Segments and Angles

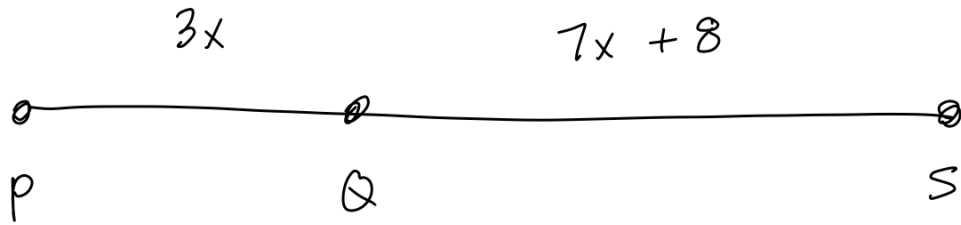
object not  
drawn  
scale.



$$4 + 7 = 11$$

$$\overline{AB} + \overline{BC} = \overline{AC}$$

Segment Addition Postulate



$$\overline{PS} = 98$$

Segment Addition Postulate  
Test 2/3

$$\overline{PQ} + \overline{QS} = \overline{PS}$$

$$3x + 7x + 8 = 98$$

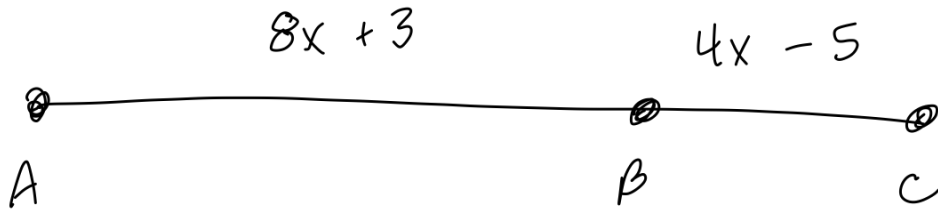
Combine like terms

$$10x + 8 = 98$$

$$-8 \quad -8$$

$$\frac{10x}{10} = \frac{90}{10}$$

$$x = 9$$



$$AC = 118$$

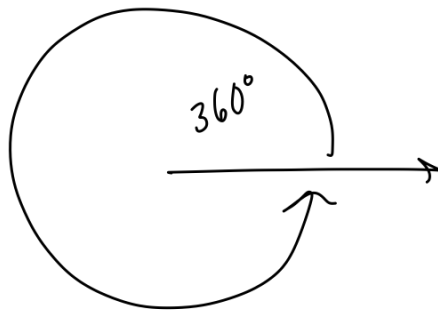
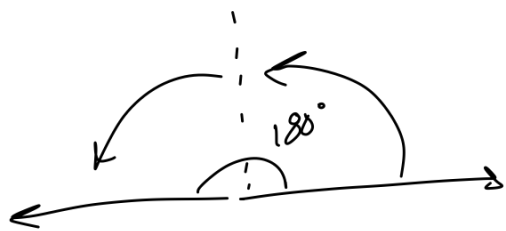
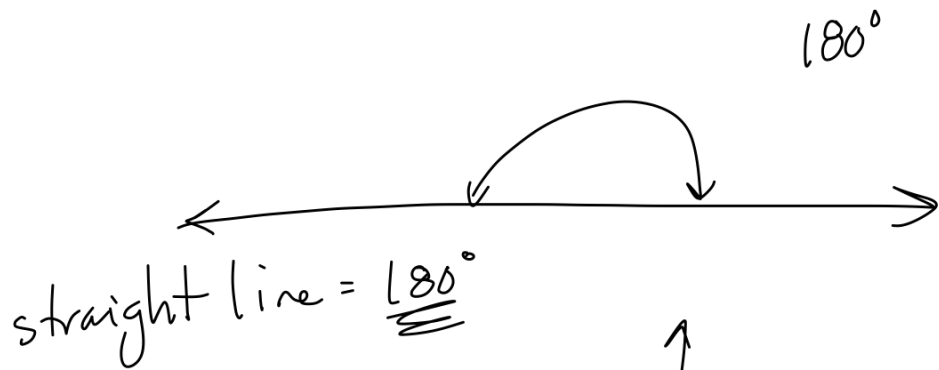
$$8x + 3 + 4x - 5 = 118$$

$$12x - 2 = 118$$

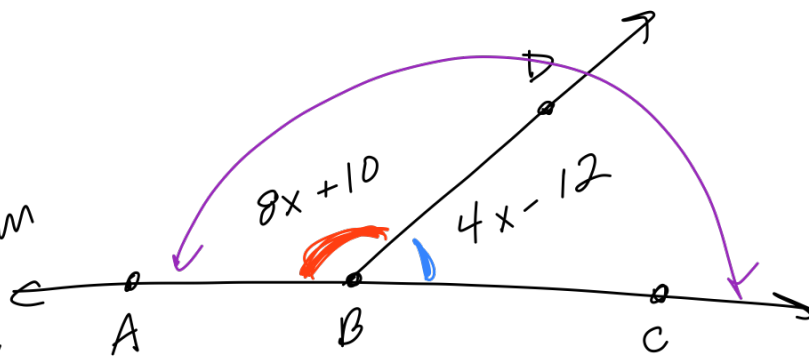
$$+2 \quad +2$$

$$\frac{12x}{12} = \frac{120}{12}$$

$$x = 10$$



Angle Addition  
Postulate



$$\angle ABD + \angle DBC = \angle ABC$$

$$8x + 10 + 4x - 12 = 180^\circ$$

$$12x - 2 = 180$$

$$+2 \quad +2$$

$$\frac{12x}{12} = \frac{182}{12}$$

$$x = 15.1666\dots$$

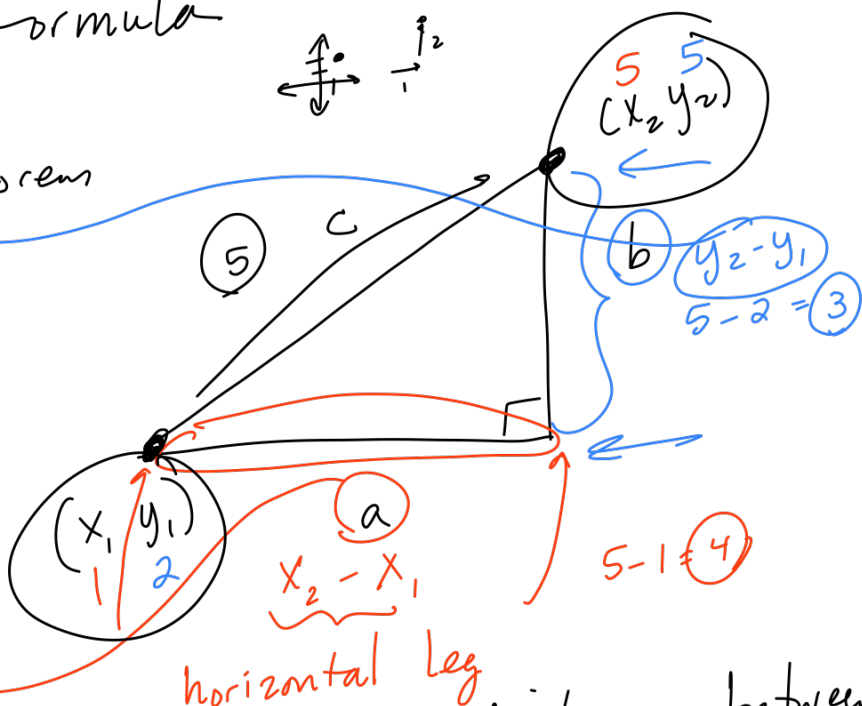
# 1-6 The Coordinate Plane

## Distance Formula

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

$$(x_2 - x_1)^2 + (y_2 - y_1)^2 = d^2$$



$c = d =$  distance between points

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{d^2}$$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = d$$

$$\begin{matrix} (x_1, y_1) & (x_2, y_2) \\ (1, 2) & (5, 5) \\ \sqrt{(4)^2 + (3)^2} \end{matrix}$$

$$\begin{aligned} &\sqrt{(5-1)^2 + (5-2)^2} \\ &\sqrt{(4)^2 + (3)^2} \\ &\sqrt{16 + 9} = \sqrt{25} \end{aligned}$$

(5)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(3 - (-1))^2 + (-4 - 3)^2}$$

$$\sqrt{(3+1)^2 + (-4-3)^2}$$



$$4^2 = 4 * 4 = 16$$

$$(-7)^2 = (-7)(-7) = 49$$

$$\sqrt{4^2 + (-7)^2}$$

$$\sqrt{16 + 49} = \sqrt{65} = 8.1$$

$\sqrt{\quad}$   $\sqrt{\quad}$

(2, 5)  
(5, -6)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(5 - 2)^2 + (-6 - 5)^2}$$

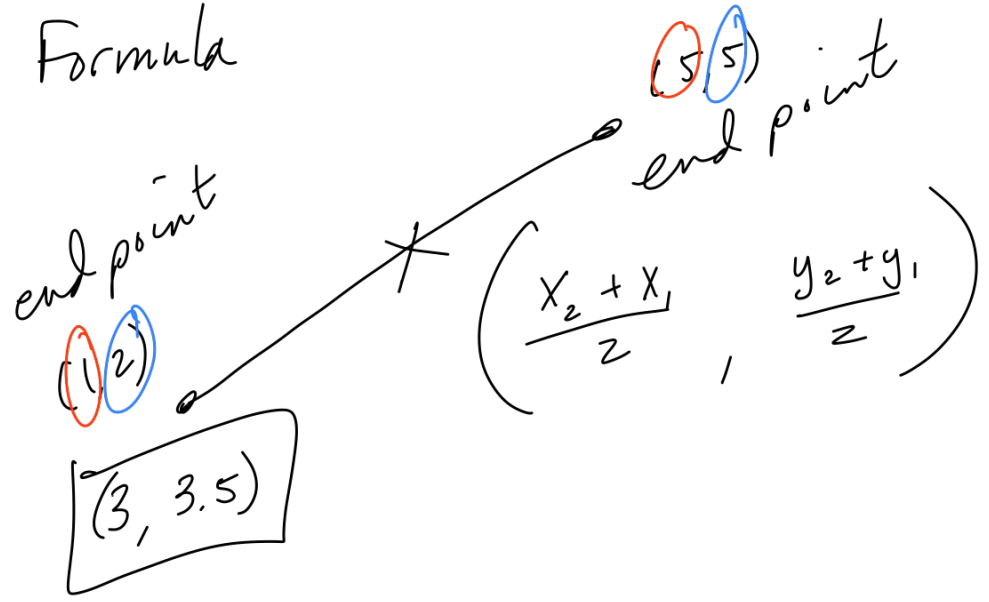
$$\sqrt{3^2 + (-11)^2}$$

$$\sqrt{9 + 121} = \sqrt{130} = 11.4$$

### Midpoint Formula

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

$$\left( \frac{6}{2}, \frac{7}{2} \right)$$



Midpoint

~~$\frac{x}{2}$~~

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

$(-1, 5)$   $(2, -3)$

$$\left( \frac{2 + (-1)}{2}, \frac{-3 + 5}{2} \right)$$

HW

1-4 evens } paper  
1-6 evens } [optimal]

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

Not until  
~~Friday~~

\* HW 2 1-4-1-6  
Quiz 2 due Sep 17<sup>th</sup>  
\* Quiz 3 due Sept 24<sup>th</sup>

On the horizon  
test 1 soon...

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

$$(0.5, 1)$$