

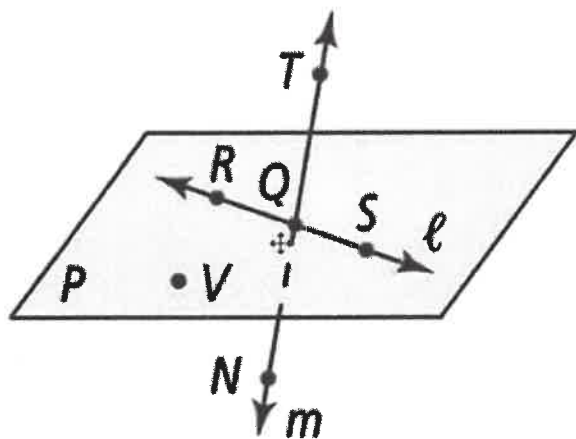
1.) Name this plane two different ways.

Plane P, Plane VSQ
Plane RSV

Where do lines RS and TN intersect? Point Q

Is line TN coplanar with line ℓ ? NO

(Same plane)



Are Points T Q and V collinear? NO

Name Three points that are collinear.

R, Q, S

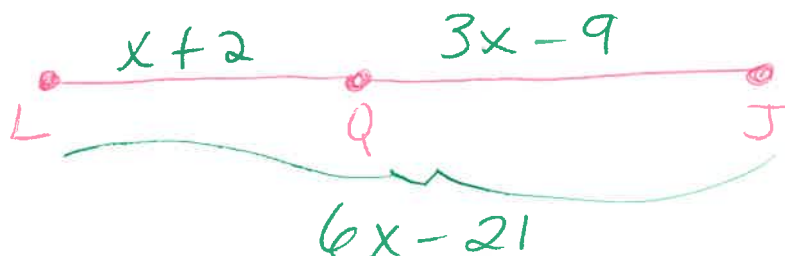
(Same line)

2.) Draw a line segment where Q is between Points L and J on a line segment where all points are collinear.

Label the following lengths on your line segment:

$$LQ = x+2, \quad QJ = 3x-9, \quad LJ = 6x-21$$

Solve for all the lengths (LQ, QJ, and LJ)



$$x+2 + 3x-9 = 6x-21$$

$$\begin{array}{r} 4x-7 = 6x-21 \\ -4x \quad -4x \hline \end{array}$$

$$\begin{array}{r} -7 = 2x-21 \\ +21 \quad +21 \hline \end{array}$$

$$\frac{14}{2} = \frac{2x}{2}$$

$$x = 7$$

$$LQ = x+2 \\ (7)+2 = 9$$

$$QJ = 3x-9 \\ 3(7)-9 = 12$$

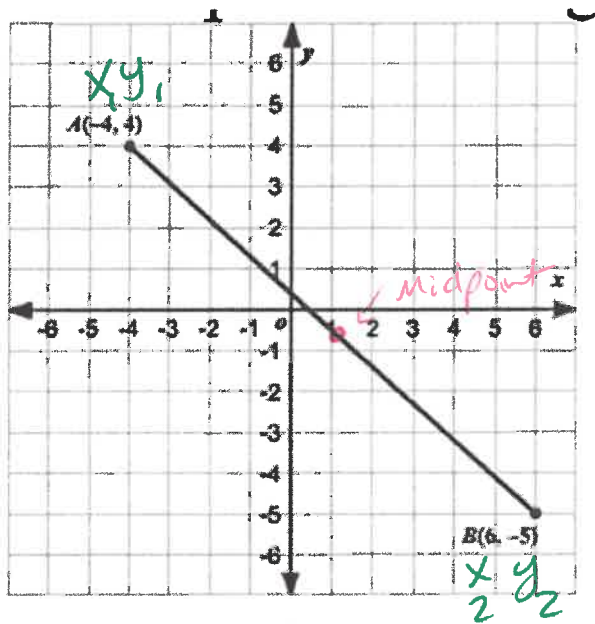
$$LJ = 6x-21 \\ 6(7)-21 = 21$$

Distance

$$\begin{aligned} &\sqrt{(6 - -4)^2 + (-5 - 4)^2} \\ &\quad (10)^2 + (-9)^2 \\ &\quad 100 + 81 \\ &\quad 181 \\ &\sqrt{181} = 13.5 \end{aligned}$$

#3

Find the coordinates of the midpoint of $\overline{AB}$.



Find the distance of $\overline{AB}$.

THE DISTANCE FORMULA

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

Midpoint

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

$$\frac{6 + -4}{2}, \frac{-5 + 4}{2}$$

$$\frac{2}{2}, -\frac{1}{2}$$

$$(1, -0.5) \text{ midpoint}$$

= midpoint

Find the coordinates of Q if R(6, -1) is the midpoint of $\overline{QS}$ and S has coordinates (12, 4). Use the midpoint formula and graph to prove.

#4

x_1, y_1

$$\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$$

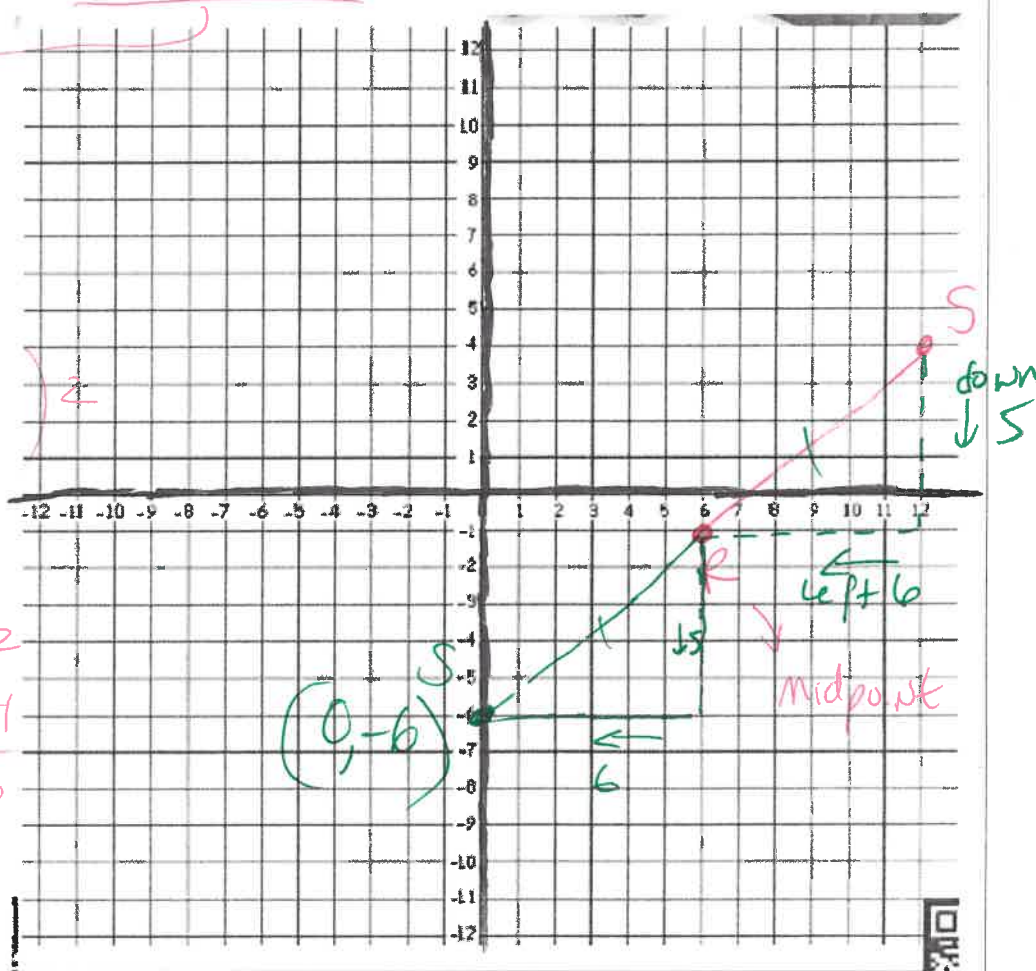
$$2 \left(\frac{12 + x}{2} = 6 \right) \text{ \& } \left(\frac{4 + y}{2} = -1 \right)$$

$$\begin{array}{rclcrcl} 12 + x & = & 12 & & 4 + y & = & -2 \\ -12 & -12 & & & -4 & -4 & \end{array}$$

$$x = 0$$

$$y = -6$$

$$(0, -6)$$

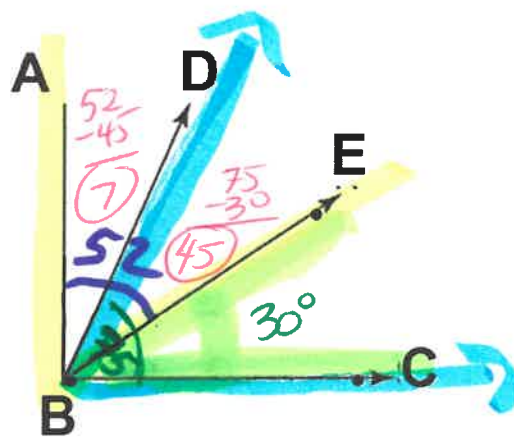


use slope
↓ 5
← 6

Follow this slope
from point R

$$(0, -6)$$

5.)



Find the measure of angle ABD if you know that $m\angle ABE = 52$, $m\angle DBE = 45$, $m\angle EBC = 30$

$$\angle DBC = 75$$

$$\angle DBE = 45^\circ$$

$$\angle ABD = 7^\circ$$

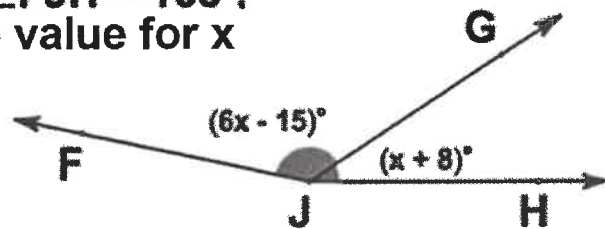
$$\angle ABC = 7^\circ + 45^\circ + 30^\circ = 82^\circ$$

6.) Given: $4(5x+7)-3x=12x-27$

Prove: $x=-11$

Statements	Reasons
1. $4(5x+7)-3x=12x-27$	1. Given
2. $20x+28-3x=12x-27$	2. Distributive Property
3. $17x+28=12x-27$	3. Combine like terms / Simplify
4. $5x+28=-27$	4. Subtraction Property
5. $5x=-55$	5. Subtraction Property
6. $x=-11$	6. Division Property

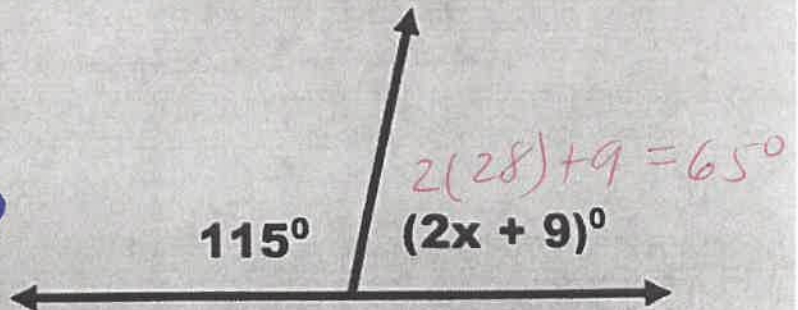
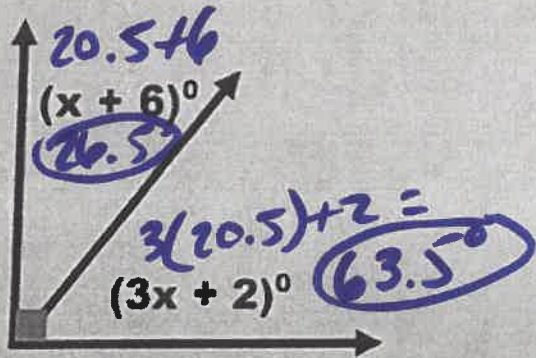
- 7.) Given $m\angle FJH = 168^\circ$.
Prove the value for x



Statements	Reasons
$m\angle FJH = 168$	Given
$m\angle FJG + m\angle GJH = m\angle FJH$	Angle Addition Postulate
$(6x - 15) + (x + 8) = 168$	Substitution
$7x - 7 = 168$	Combine Like Terms / Simplify
$7x = 175$	Addition Property
$x = 25$	Division Property

#8

COMPLEMENTARY AND SUPPLEMENTARY ANGLES



Complementary

*When the sum of two angles add up to 90 degrees

$$\begin{aligned} x + 6 + 3x + 2 &= 90 \\ 4x + 8 &= 90 \\ -8 &-8 \end{aligned}$$

$$\frac{4x}{4} = \frac{82}{4}$$

$$x = 20.5$$

Supplementary

*When the sum of two angles add up to 180 degrees

$$\begin{aligned} 115 + 2x + 9 &= 180 \\ 2x + 124 &= 180 \end{aligned}$$

$$\frac{2x}{2} = \frac{56}{2}$$

$$x = 28$$

Reminders:

Angle measures are numbers and can be equal.

$$m\angle 1 = m\angle 4$$

What degrees?

Angles are figures and can be congruent.

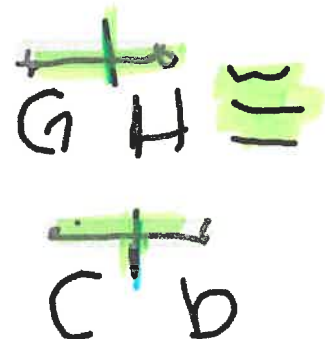
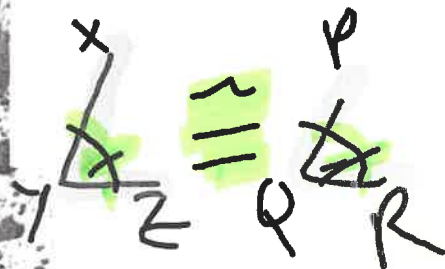
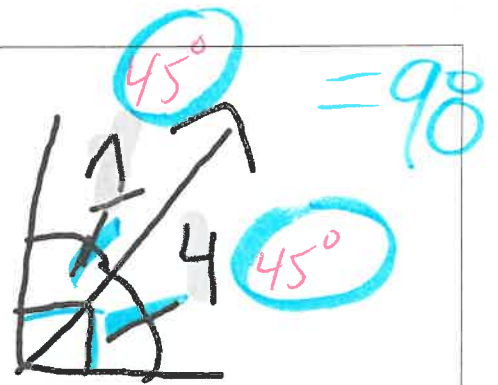
$$\angle XYZ \cong \angle PQR$$

Segment lengths are numbers and can be equal.

$$MN = ST$$

Segments are figures and can be congruent.

$$\overline{GH} \cong \overline{CD}$$



*Know what the congruent markings mean.

Vocabulary to know *study module 1 & 2:

Valid (true)

Counterexample (non-example)

Inverse (opposite)

Hypothesis (beginning)

Conclusion (ending)

linear pair (line - 180 degrees -supplementary)

adjacent (angles next to each other *any degrees)

right angles/perpendicular (90 degrees)

vertical angles

collinear (same line)

coplaner (same plane)

congruent (equal)

bisector (cuts in half - congruent parts of a line

segment/angle) *Midpoint/Angle Bisector

Know your properties!

***STUDY FROM CLASS WEBSITE, TEAMS -**

CLASS NOTEBOOK VOCAB/NOTES CONTENT LIBRARY