S-G Geometry 6/15 Session 2

Find the pattern of each of the following. Give next term.

1.) 5, 12, 19, 26... (33)

+7 +7 +7 +7

2.) 1, 4, 9, 16, 25... (36)

+3 +5 +7 +9 +11

Add consecutive odd numbers or perfect squares 5.)

3.) 203, 304, 405, 506, ... (607) 6.)

+101 +101 +101 +101

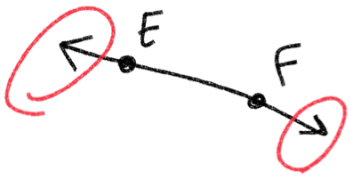
4.) 2, 3, 5, 7, 11, 13, ... (17) prime numbers 7.)

+1 +2 +2 +4 +2

Name each.

Ray $\overrightarrow{AB}$

Segment $\overline{CD}$



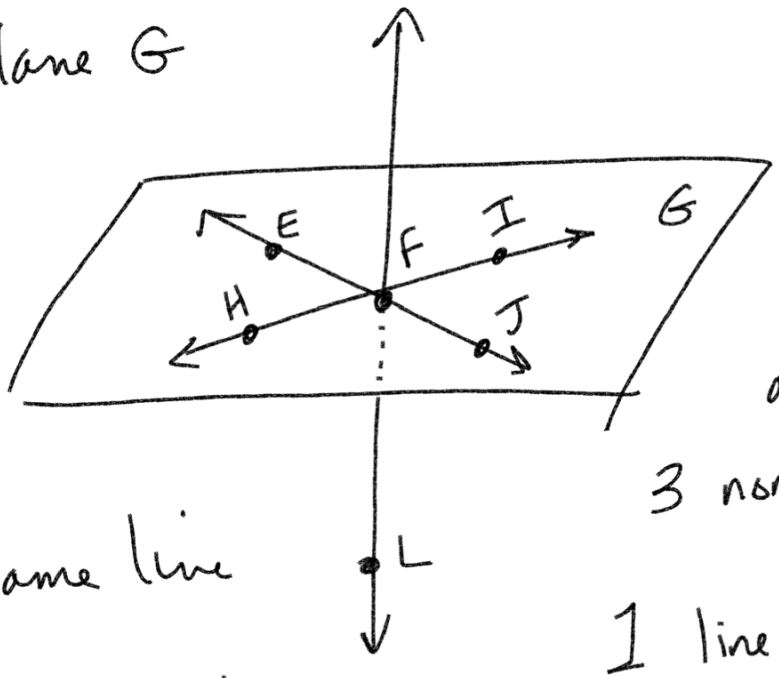
Line $\overleftrightarrow{EF}$

Name Plane G

HFE

JFI

JHF



~~EFJ~~ on same line

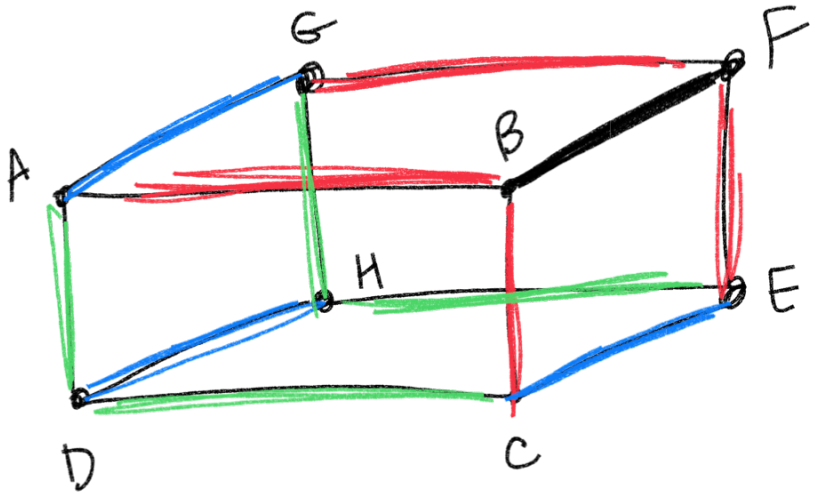
~~HFL~~ L not on plane G

Requirements for a plane.

3 noncollinear points

or

1 line and 1 noncollinear point



$\overline{BF}$

1.) Intersecting Segments

$\overline{GF}$, $\overline{AB}$, $\overline{EF}$, $\overline{CB}$

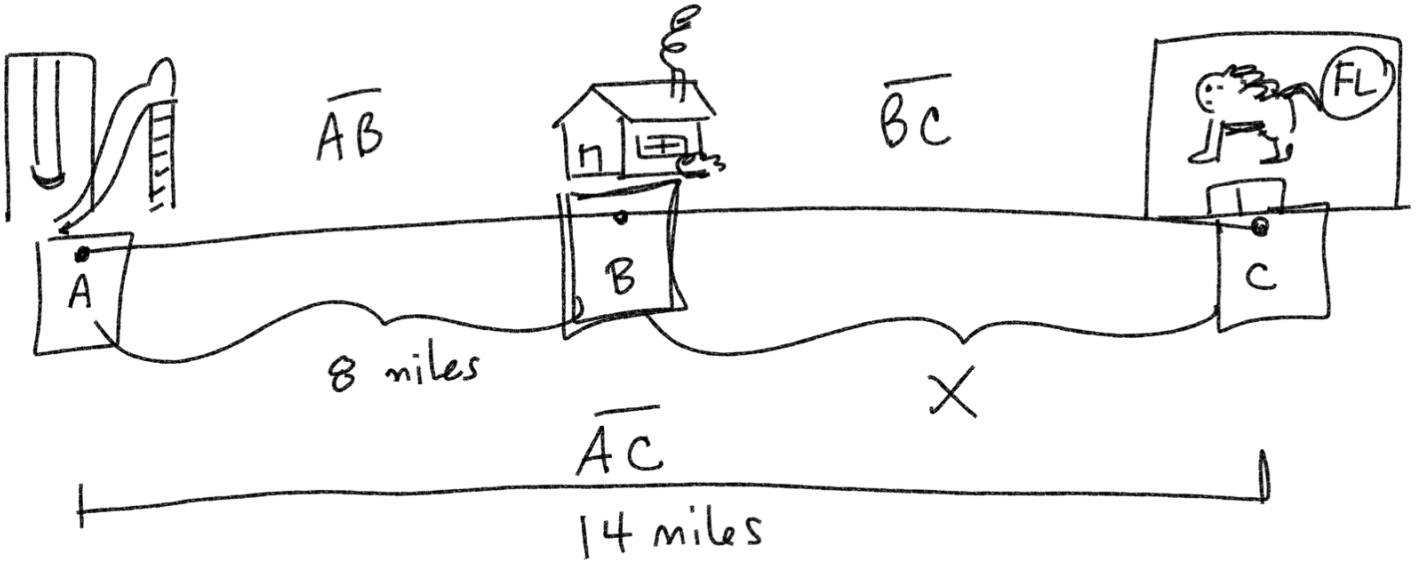
2.) Parallel Segments

$\overline{DH}$, $\overline{CE}$, $\overline{AG}$

3.) Skew Segments

$\overline{HE}$, $\overline{DC}$, $\overline{AD}$, $\overline{GH}$

1-4 Segment Addition Postulate (SAP)



Segment Addition Postulate

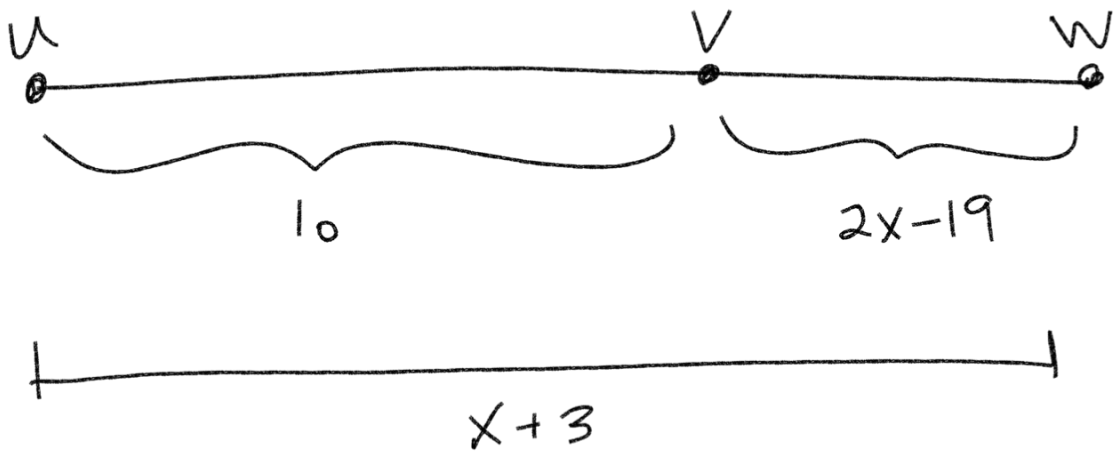
$\overline{AB} + \overline{BC} = \overline{AC}$

$8 + X = 14$

$8 + X = 14$

$-8 \quad -8$

$X = 6$



$\overline{UV} = 10$

$\overline{VW} = 2x-19$

$\overline{UW} = x+3$

Combine Like Terms

Segment Addition Postulate

$\overline{UV} + \overline{VW} = \overline{UW}$

$10 + 2x - 19 = x + 3$

$10 + (-19)$

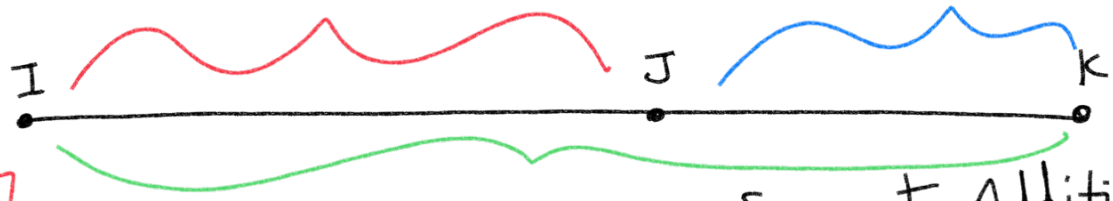
$2x - 9 = x + 3$

$-x \quad -x$

$x - 9 = 3$

$+9 \quad +9$

$\boxed{x = 12}$



$\overline{IJ} = 11$

$\overline{IK} = x+8$

$\overline{JK} = 2x-13$

Segment Addition Postulate

$\overline{IJ} + \overline{JK} = \overline{IK}$

$11 + 2x - 13 = x + 8$

$2x - 2 = x + 8$

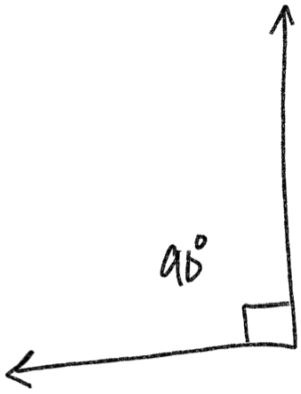
$+2 \quad +2$

$x =$

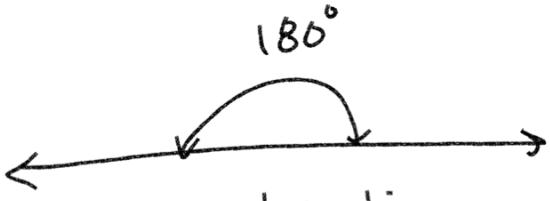
$2x = x + 10$

$-x \quad -x$

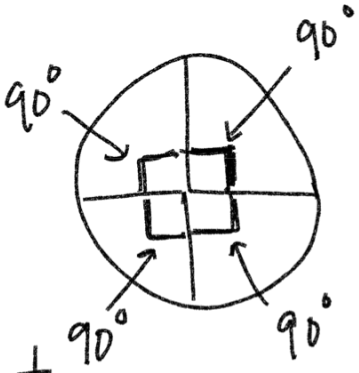
$\boxed{x = 10}$



Right Angle

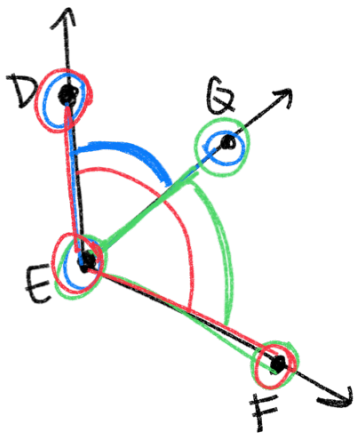


straight line



Degrees in a circle: 360°

Angle Addition Postulate



"angle"

$m\angle DEF = 30x - 5$

$m\angle DEQ = 9x - 5$

$m\angle QEF = 126°$

$\angle DEQ + \angle QEF = \angle DEF$

$9x - 5 + 126° = 30x - 5$

$9x + 121 = 30x - 5$

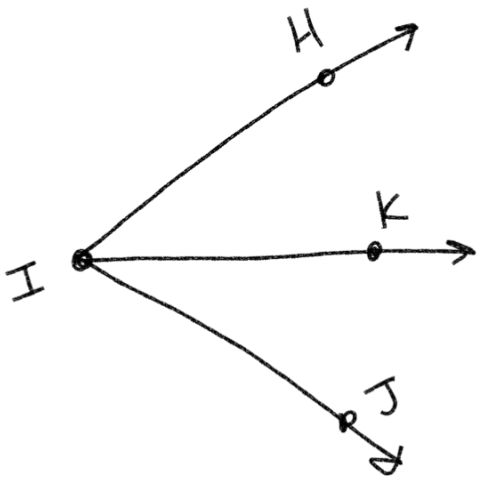
$-9x \qquad -9x$

$121 = 21x - 5$

$+5 \qquad +5$

$\frac{126}{21} = \frac{21x}{21}$

$x = 6$



$\measuredangle KIJ = 5x+4$

$\measuredangle HIJ = 74°$

$\measuredangle HIK = 2x+14$

$\measuredangle HIK + \measuredangle KIJ = \measuredangle HIJ$

$2x+14 + 5x+4 = 74$

$7x + 18 = 74$

$-18 \quad -18$

$\frac{7x}{7} = \frac{56}{7}$

$x = 8$

Distance Formula

Pythagorean Theorem

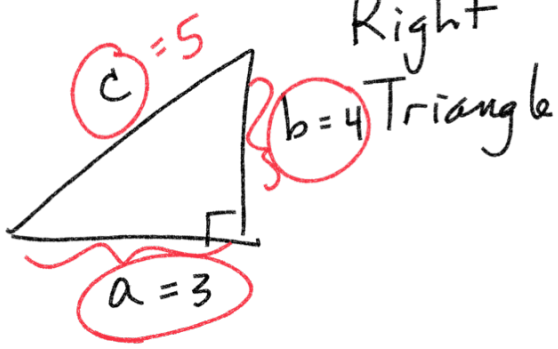
$a^2 + b^2 = c^2$

$(3)^2 + (4)^2 = c^2$

$9 + 16 = c^2$

$\sqrt{25} = \sqrt{c^2}$

$c = 5$



Distance Formula

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

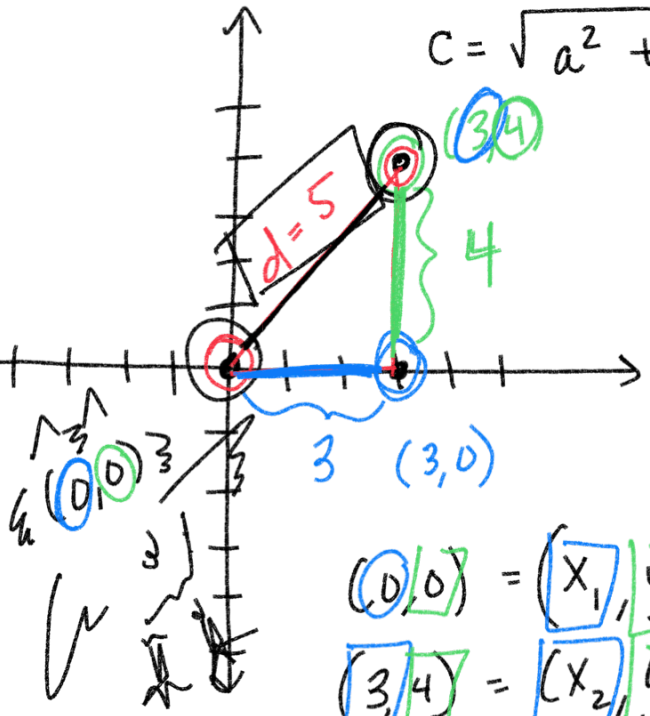
$$\sqrt{(3-0)^2 + (4-0)^2}$$

$$\sqrt{3^2 + 4^2}$$

$$\sqrt{9 + 16}$$

$$\sqrt{25} = 5$$

$c = \sqrt{a^2 + b^2}$



$(0,0) = (x_1, y_1)$

$(3,4) = (x_2, y_2)$

Find distance between (x_1, y_1) and (x_2, y_2)

$(1, -3)$ and $(6, 9)$

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

$$\sqrt{(6-1)^2 + (9-(-3))^2}$$

$9 + 3$

$$\sqrt{5^2 + (12)^2}$$

$$\sqrt{25 + 144} = \sqrt{169} = 13$$

$$\boxed{d = 13}$$