S-G Geometry Session 2 6/5

Find the pattern.

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

+7 +7 +7 +7

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

+3 +5 +7 +9 +11

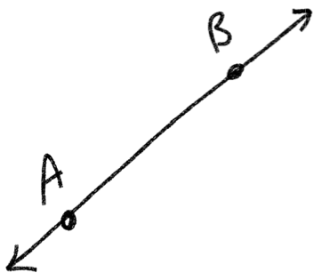
1.) Add consecutive odd numbers
or
2.) consecutive perfect squares

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

+101 +101 +101

4.) 2, 3, 5, 7, 11, 13, . . . 17, 19, 23, 29 All prime number

A • Point ∅ dimensions



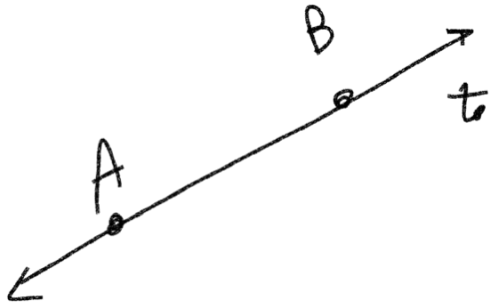
Line Made up of 2 points

Plane

* 1.) 3 noncollinear points
or
2.) 1 line and 1 noncollinear point.

Line

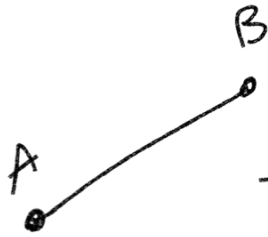
$\overleftrightarrow{AB}$



Arrows extend to infinity

Segment

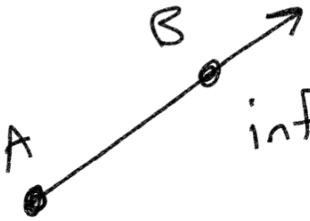
$\overline{AB}$



terminal on both sides

Ray

$\overrightarrow{AB}$



infinite

terminal

1 line + 1 noncollinear
or
3 noncollinear pts

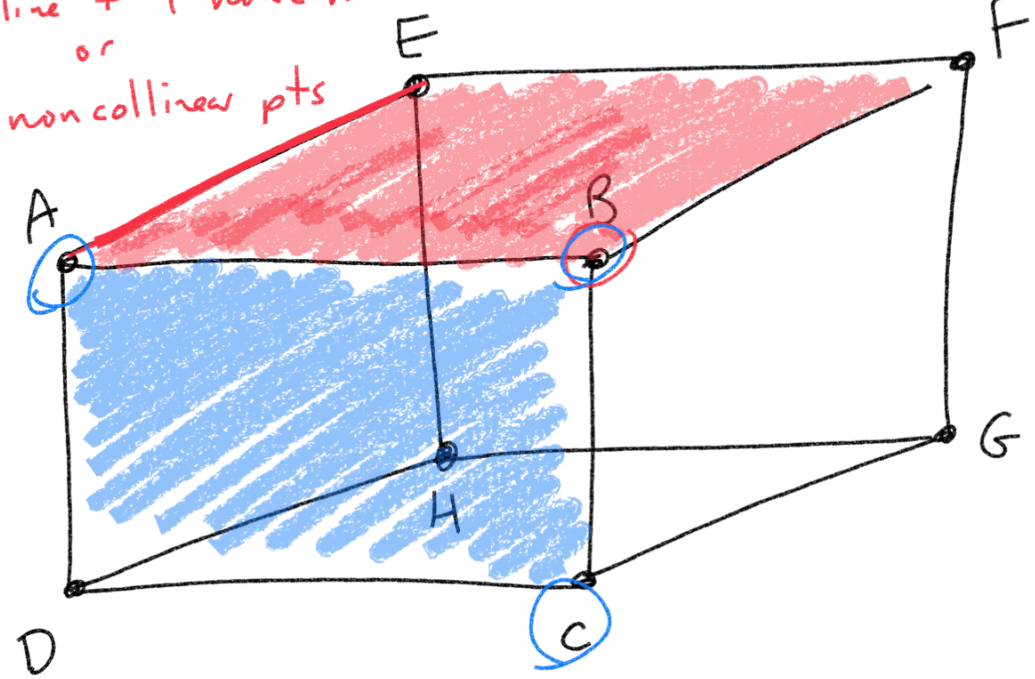
Plane

AEB

BFA

BFE

BAE



Plane

ABC

CDA

BDC

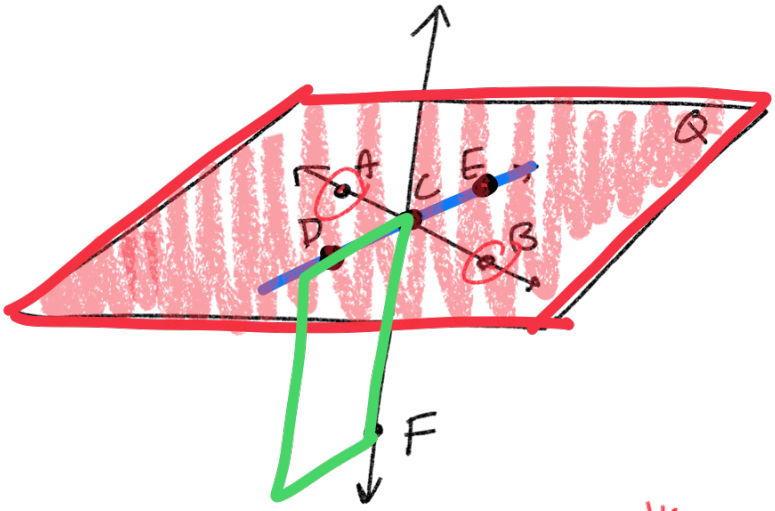
Plane Q

Line

$\overleftrightarrow{CE}$

$\overleftrightarrow{DE}$

$\overleftrightarrow{DC}$



Plane Q

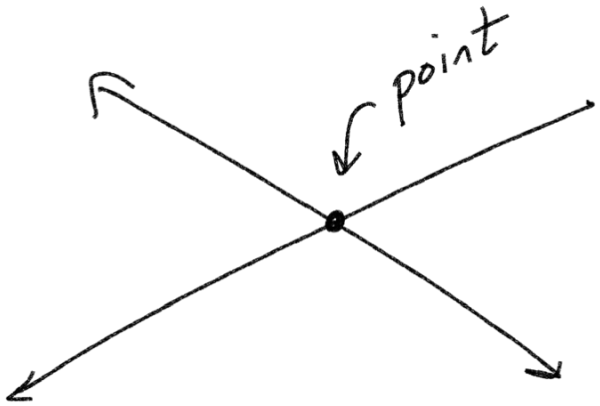
AEB ✓

~~AEB~~

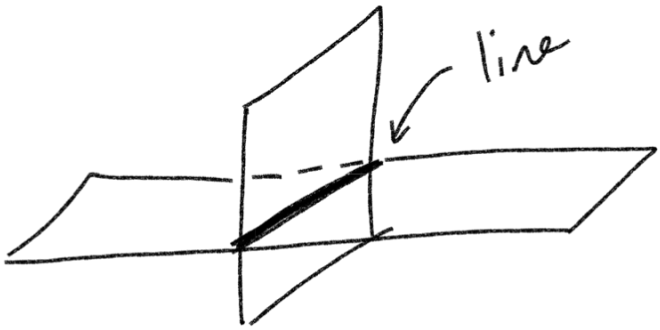
DCA ✓

~~DCF~~ Not Plane Q

Plane: 1.) 3 noncollinear pts
or
2.) 1 line and
1 noncolllinear pt.



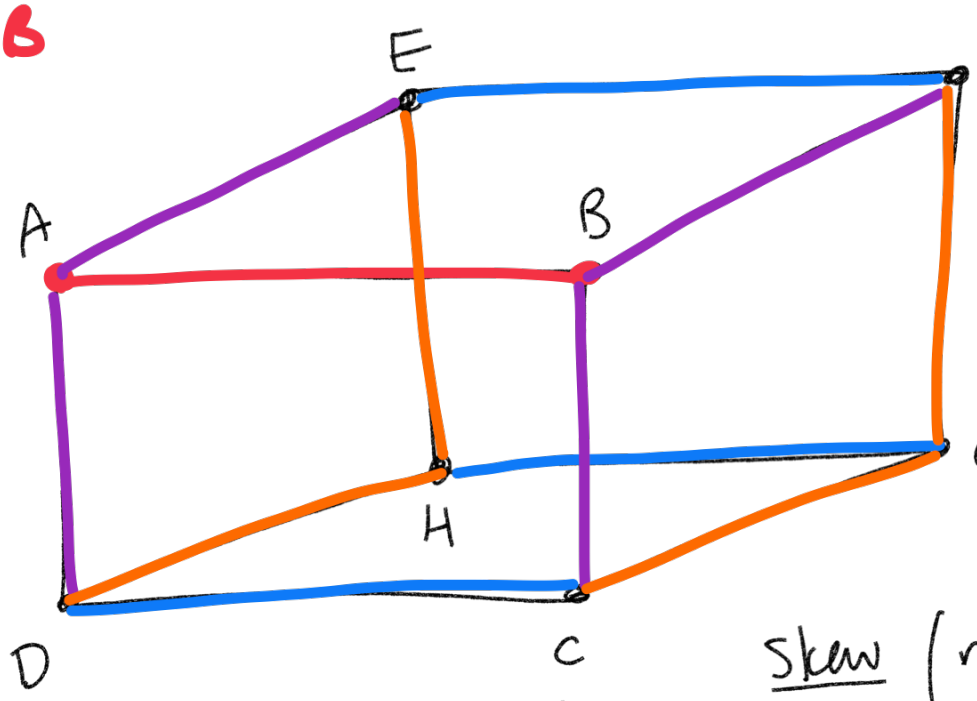
Intersection of
2 Lines
Point



Intersection of
2 planes
Line

Line Segment

$\overline{AB}$



Parallel

$\overline{EF}$, $\overline{HG}$, $\overline{DC}$

Intersecting perpendicular

$\overline{AE}$, $\overline{BF}$

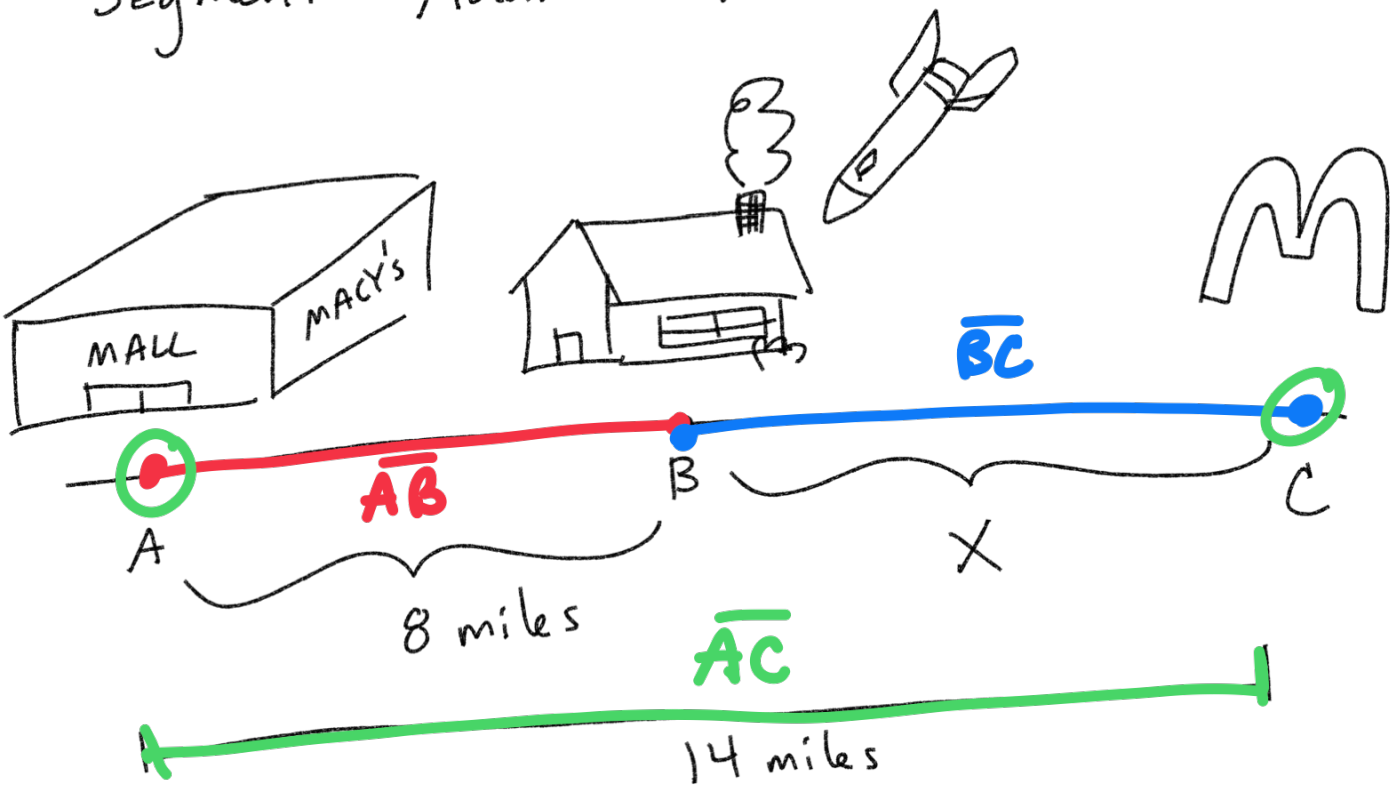
$\overline{AD}$, $\overline{BC}$

Skew (never touch, but not on same plane)

$\overline{CG}$, $\overline{DH}$, $\overline{FG}$, $\overline{EH}$

Parallel Lines
- no intersection
- same slope
- exist on same plane

Segment Addition Postulate (SAP)

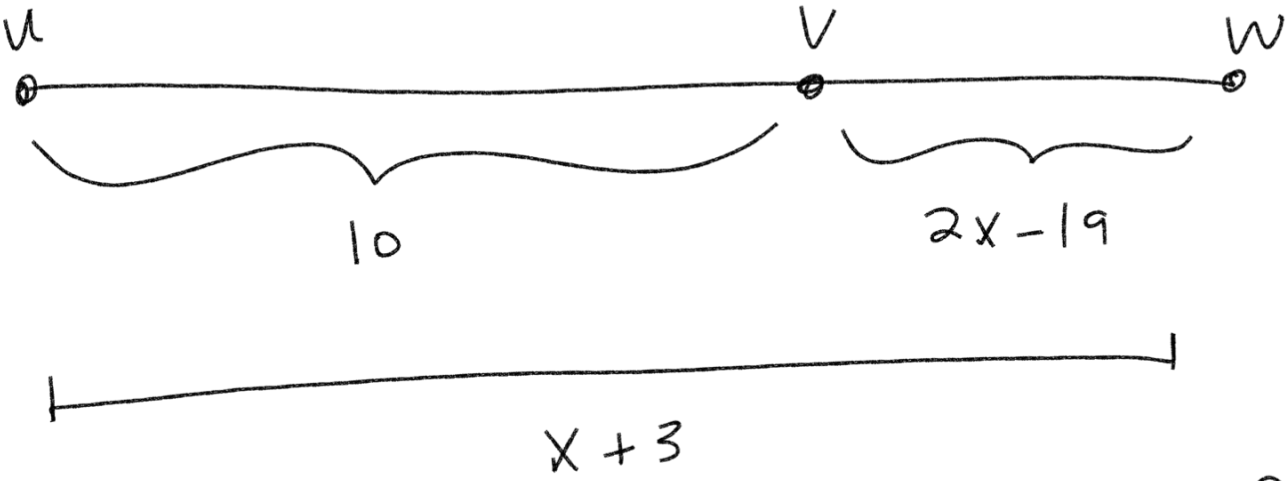


Segment Addition Postulate

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

$$8 + X = 14$$

$$8 + X = 14$$
$$-8 \qquad -8$$
$$X = 6$$



$\overline{UV} = 10$

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

$\overline{UW} = x+3$

Segment Addition Postulate

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

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

$10-19=-9$

$2x-9 = x+3$

$-3 \quad -3$

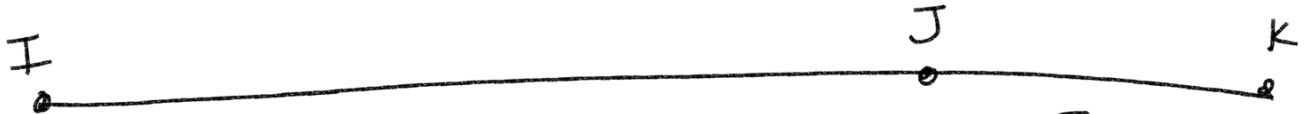
$2x-12 = x$

$-2x \quad -2x$

$-12 = -x$

$\frac{-12}{-1} = \frac{-x}{-1}$

$\boxed{x=12}$



$\overline{IJ} = \boxed{11}$

$\overline{IK} = \boxed{x+8}$

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

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

$\boxed{11} + 2x \boxed{-13} = x+8$

$11-13=-2$

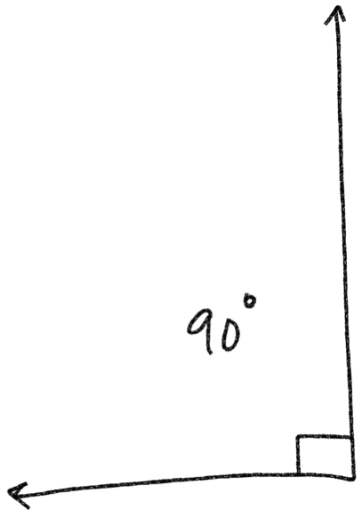
$2x-2 = x+8$

$-x \quad -x$

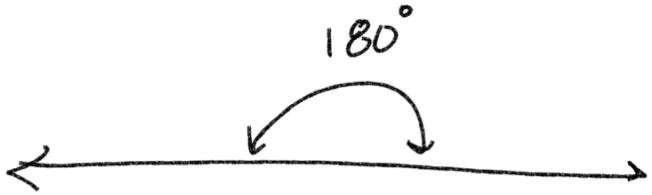
$x-2 = 8$

$+2 \quad +2$

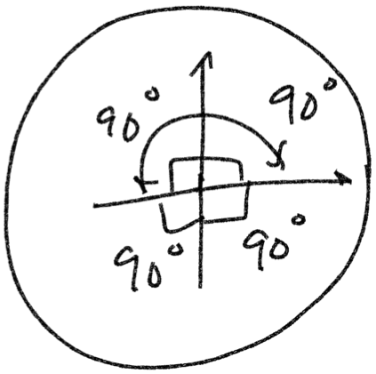
$\boxed{x=10}$



Right Angle

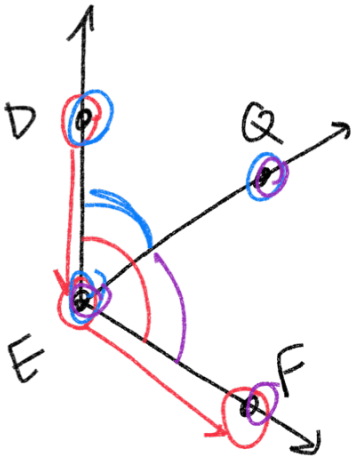


straight line



Degrees in a circle: 360°

Angle Addition Postulate (AAP)



$$\begin{cases} m\angle DEF = 30x-5 \\ m\angle DEQ = 9x-5 \\ m\angle QEF = 126^\circ \end{cases}$$

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

$9x-5+126 = 30x-5$

$9x+121 = 30x-5$

$+5 \quad +5$

$9x+126 = 30x$

$-9x \quad -9x$

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

$x = 6$