

3.

a. Name all the points collinear with E and F.

B and D

b. Are G, E, & D collinear? Are F & C collinear?

No; yes

c. Which two segments do the tick marks indicate are congruent?

\overline{AB} and \overline{BC}

d. Is $\angle A \cong \angle D$?

Yes

e. Is $\angle F \cong \angle ABF$?

Not necessarily

f. Where do \overleftrightarrow{AC} & \overleftrightarrow{FE} intersect?

B

g. $\overline{AG} \cap \overline{GF} = ??$ **G**

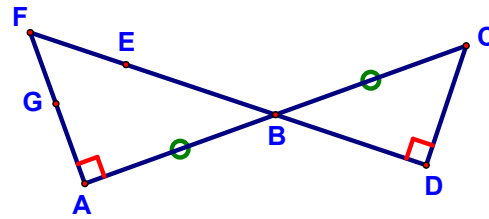
h. $\overline{AG} \cup \overline{GF} = ??$ **\overline{AF}**

i. B lies on a ray whose endpoint is E. Name this ray in all possible ways.

$\overrightarrow{EB}, \overrightarrow{ED}$

j. Name all points between F & D.

E and B



6.

$\angle ABC$ is a right angle. The ratio of the measures of $\angle ABD$ and $\angle DBC$ is 3 to 2. Find $m\angle ABD$.

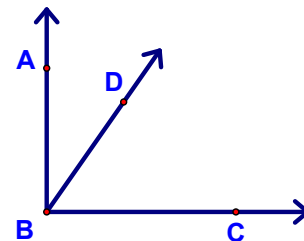
$$m\angle ABD + m\angle DBC = 90^\circ$$

$$\Rightarrow 3x + 2x = 90$$

$$\Rightarrow 5x = 90$$

$$\Rightarrow x = 18$$

$$\therefore m\angle ABD = 3x = 3(18) = 54^\circ$$



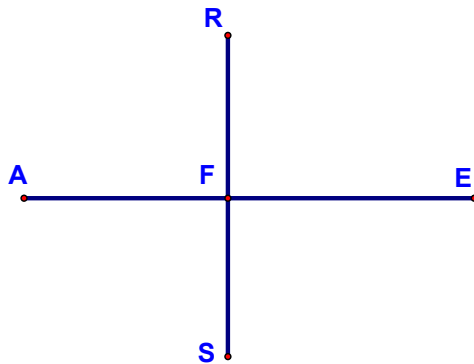
10.

A, K, O, and Y are collinear points. K is between O and A, the length of \overline{AO} added to the length of \overline{AY} is equal to the length of \overline{OY} ($OA + AY = OY$), and A is to the right of O. Draw a diagram that correctly represents this information.



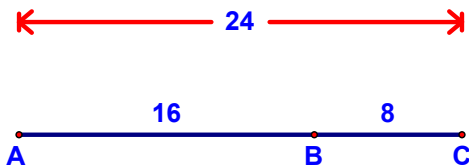
11.

Draw a diagram in which F is between A and E, F is also between R and S and A, E, R, and S are noncollinear.



12.

If $AB = 16$, $BC = 8$, and $AC = 24$, which point is between the other two?



B must be between A & C!

13.

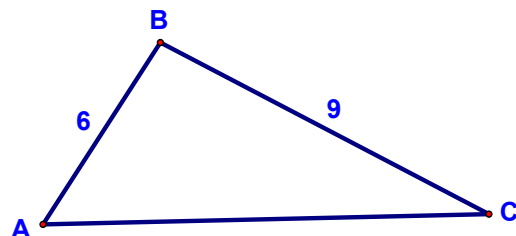
Given the diagram as shown,

a. AC must be smaller than what number?

15

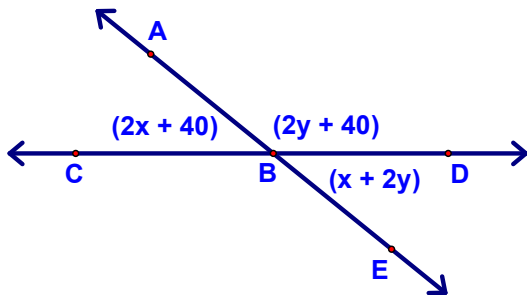
b. AC must be larger than what number?

3



Remember that the sum of any two sides of a triangle must be greater than the length of the third side!

15.

Find the measures of $\angle ABC$, $\angle ABD$, and $\angle DBE$.

$$(2x + 40) + (2y + 40) = 180$$

$$\Rightarrow 2x + 2y = 100$$

$$\Rightarrow x + y = 50$$

$$\Rightarrow x = 50 - y$$

$$(2y + 40) + (x + 2y) = 180$$

$$\Rightarrow x + 4y = 140$$

$$\text{So, } 50 - y + 4y = 140$$

$$\Rightarrow 3y = 90$$

$$\Rightarrow y = 30$$

$$\Rightarrow x = 50 - 30 = 20$$

$$\therefore m\angle ABC = 2(20) + 40 = 80^\circ,$$

$$m\angle ABD = 2(30) + 40 = 100^\circ$$

$$m\angle DBE = 20 + 2(30) = 80^\circ$$