

Guided Notes

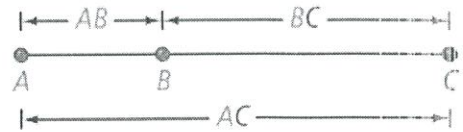
Name: _____

Geometry Section 1.3

Section 1.3 - Measuring Segments

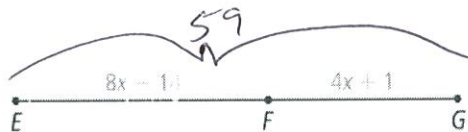
Segment Addition Postulate

If A, B and C are collinear and B is between A and C , then $AB + BC = AC$.



Example 1: Answer the following:

1. If $EG = 59$, what are EF and FG ?



$$EF + FG = EG$$

$$8x - 14 + 4x + 1 = 59$$

$$12x - 13 = 59$$

$$12x = 72$$

$$x = 6$$

$$EF = 8(6) - 14$$

$$= 48 - 14$$

$$= 34$$

$$FG = 4(6) + 1$$

$$= 24 + 1$$

$$= 25$$

2. K is between J and L . If $JK = 3x + 8$, $KL = 2x + 4$, and $JL = 32$, what is JK ?

$$JK + KL = JL$$

$$3x + 8 + 2x + 4 = 32$$

$$5x + 12 = 32$$

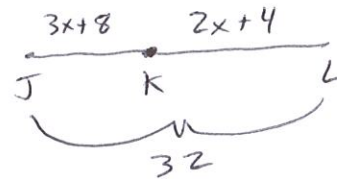
$$5x = 20$$

$$x = 4$$

$$JK = 3(4) + 8$$

$$= 12 + 8$$

$$= 20$$



Need to put this on Blank Note

Congruent Segments/Equal Lengths

• 2 segments are congruent (\cong) if they have the same length
The lengths are equal ($=$)

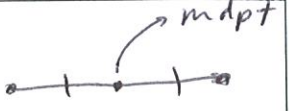
• ~~AB = CD~~, If $AB = CD$, then $\overline{AB} \cong \overline{CD}$

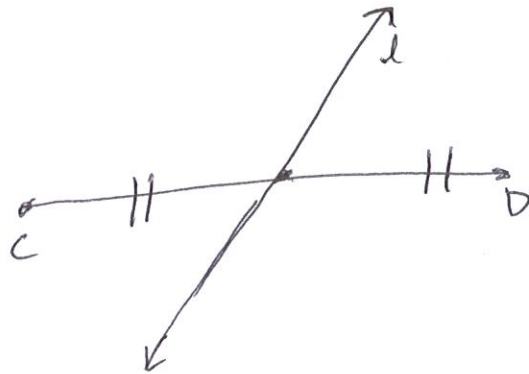


• If there is more than one set of congruent segments, indicate each set with the same number of marks:



Midpoint and Segment Bisector

Midpoint -	The point that divides a segment into 2 ^{segments that} have equal length	
Segment Bisector -	a point, line, ray or other segment that intersects a segment at its mdpt	



l is segment bisector of \overline{CD}

Example 2: Q is the midpoint of \overline{PR} . If $PQ = 6x - 7$ and $QR = 5x + 1$, what are PQ, QR, and PR?

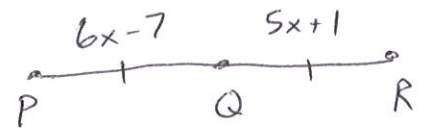
Draw a Picture.

$$\begin{aligned} PQ &= QR \\ 6x - 7 &= 5x + 1 \\ x - 7 &= 1 \\ x &= 8 \end{aligned}$$

$$\begin{aligned} PQ &= 6(8) - 7 \\ &= 48 - 7 \\ &= 41 \end{aligned}$$

$$\begin{aligned} QR &= 5(8) + 1 \\ &= 40 + 1 \\ &= 41 \end{aligned}$$

$$PR = 41 + 41 = 82$$



Example 3: Use the figure to answer the following:

1. U is the midpoint of \overline{TV} . What are TU, UV, and TV?



$$\begin{aligned} TU &= UV \\ 8x + 11 &= 12x - 1 \\ 8x + 12 &= 12x \\ 12 &= 4x \\ 3 &= x \end{aligned}$$

$$\begin{aligned} TU &= 8(3) + 11 \\ &= 24 + 11 \\ &= 35 \end{aligned}$$

$$\begin{aligned} UV &= 35 \\ TV &= 70 \quad (35 + 35) \end{aligned}$$

2. Is it necessary to substitute 3 for x in the expression UV in order to find UV? Explain.

No, since U is mdpt, $TU = UV$