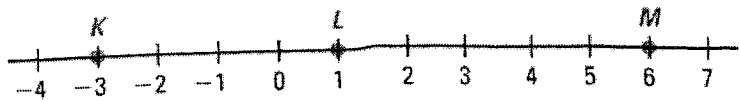


Geometry Notes on 1-5: Measuring Segments



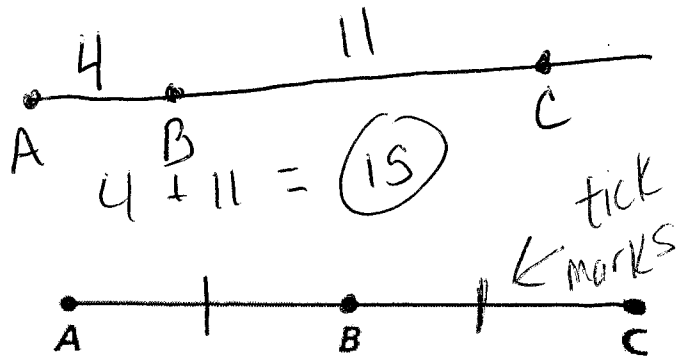
Ruler Postulate: Segment length is absolute value (positive) of the difference between endpoints.

$$\overline{KL} = |1 - (-3)| = 4$$

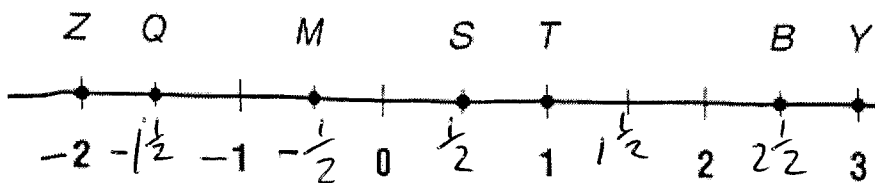
$$\overline{Lm} = |1 - 6| = 5$$

Segment Addition Postulate:

IF A, B, C are collinear,
then $\overline{AB} + \overline{BC} = \overline{AC}$



Midpoint: point dividing a segment into two congruent segments. Congruent means same length



Symbol \cong
 $\overline{AB} \cong \overline{BC}$

$SY = 2\frac{1}{2}$ $QM + ST = 1\frac{1}{2}$ $QT = 2\frac{1}{2}$ $ZS + SB = 4\frac{1}{2}$ $ZB = 4\frac{1}{2}$ $QS + MT = 3\frac{1}{2}$

True or false:

$ZT + BY = ZY$ **F**

$QS > SY$ **F**

$TY < MT$ **F**

$MS + TB = ZM + QM$
 $1 + 1\frac{1}{2} = 1\frac{1}{2} + 1$

$2\frac{1}{2} = 2\frac{1}{2}$

Name 2 congruent lengths. $\overline{ZQ} \cong \overline{ST}$

If $ZP = 7$, where could P be? @ 5

If $YA = 4$, where could A be? @ 7, @ -1

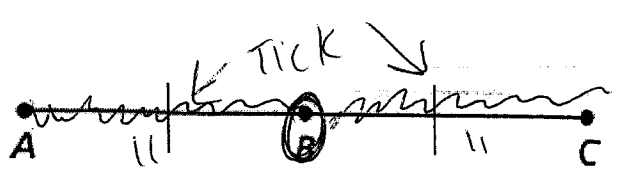
T



$$AB = 12$$

$$BC = 3$$

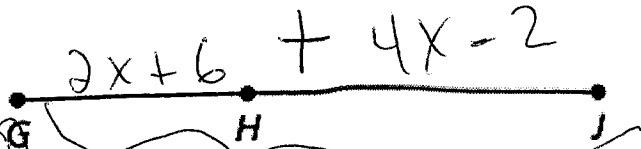
$$AC = 15$$



$$AB = 11$$

$$BC = 11$$

$$AC = 22$$



(14) $GH = 2x + 6$

28

(14) $HJ = 4x - 2$

$$\boxed{2x+6} + \boxed{4x-2} = 28$$

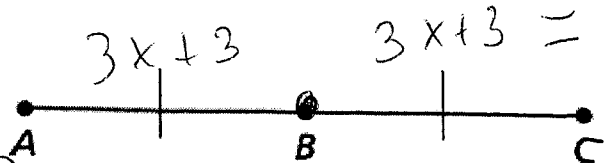
$$6x + 4 = 28$$

$$\quad \quad -4 \quad \quad -4$$

$$\frac{6x}{6} = \frac{24}{6}$$

$$GJ = 28$$

$$\boxed{x = 4}$$



(27) $AB = 3x + 3$

(27) $BC = \boxed{3x+3} + \boxed{3x+3} = 9x - 18$

(54) $AC = 9x - 18$

$$6x + 6 = 9x - 18$$

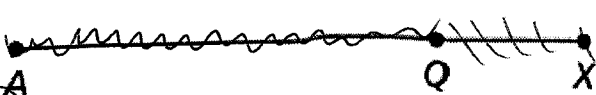
$$\quad \quad -6x \quad \quad -6x$$

$$6 = 3x - 18$$

$$\quad \quad +18 \quad \quad +18$$

$$\frac{24}{3} = \frac{3x}{3}$$

$x = 8$



(24) $AQ = 3x - 9$

$$\boxed{3x-9} + \boxed{2x+1} = 4x + 3$$

(23) $QX = 2x + 1$

$$5x - 8 = 4x + 3$$

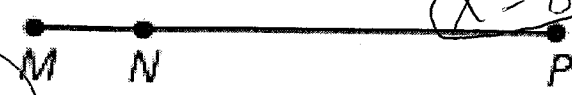
$$\quad \quad -4x \quad \quad -4x$$

$$x - 8 = 3$$

$$\quad \quad +8 \quad \quad +8$$

$$x = 11$$

(47) $AX = 4x + 3$



(12) $MN = x + 7$

$$\boxed{x+7} + \boxed{6x-3} = 10x - 11$$

(27) $NP = 6x - 3$

$$7x + 4 = 10x - 11$$

$$\quad \quad -7x \quad \quad -7x$$

$$4 = 3x - 11$$

$$\quad \quad +11 \quad \quad +11$$

$$15 = 3x$$

(39) $MP = 10x - 11$

$$\boxed{x = 5}$$