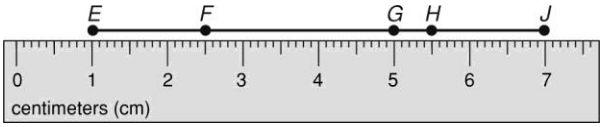
Geometry G
Section 1.2

What exactly is distance? Look at the ruler below and answer the questions.



1. What is the distance between point H and point G?

$5.5 - 5$ **.5**

2. What is the distance between point J and point G?

$7 - 5$ **2**

3. What is the distance between point G and point J?

$5 - 7$ -2 **2**

4. Compare your answers from questions 2 & 3.

they are the same

Distance is the positive difference between 2 points. The distance between 2 pts is called the length

Find the length of each segment on your own.

a) FG

$5 - 2.5$ **2.5**

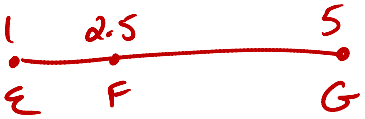
b) FE

$2.5 - 1$ **1.5**

c) EG

$5 - 1$ **4**

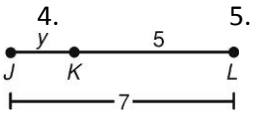
Segment Addition Postulate:



$EF + FG = EG$
$1.5 + 2.5 = 4$
$4 = 4$

Examples:

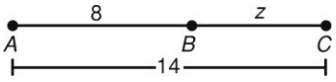
a) Find JK



$y + 5 = 7$
$-5 \quad -5$
$y = 2$

JK = 2

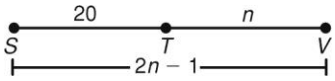
b) Find BC



$8 + z = 14$
$-8 \quad -8$
$z = 6$

BC = 6

c) Find SV



$20+n=2n-1$

$-n \quad -n$

$20=n-1$

$+1 \quad +1$

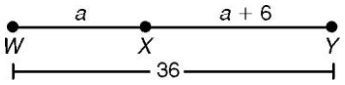
$21=n$

$SV=2(21)-1$

$SV=42-1$

$\boxed{SV=41}$

d) Find XY



$a+a+6=36$

$2a+6=36$

$-6 \quad -6$

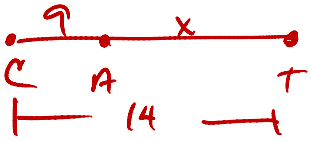
$\frac{2a}{2}=\frac{30}{2}$

$a=15$

$XY=15+6$

$\boxed{XY=21}$

e) A is between C and T, CA = 9 and CT = 14. Find AT.



$9+x=14$

$-9 \quad -9$

$x=5$

$\boxed{AT=5}$

Congruent Segments:

Segments that have the same length

$\overline{AB} \cong \overline{CD}$

Midpoint: E is mdpt of $\overline{GO}$. E bisects (or divides) a segment into 2 $\cong$ segments.

$\overline{GE} \cong \overline{EO}$

Example: In the figure below, *P* is the midpoint of $\overline{NQ}$. Answer the below questions.

1. $\overline{PQ}$ is congruent to $\overline{NP}$

2. Find x. $3x=2x+4$

$-2x \quad -2x$

$\boxed{x=4}$

3. Find NP $3(4)$

$\boxed{12}$

4. Find PQ $2(4)+4$

$8+4$

$\boxed{12}$

5. Find NQ $12+12$

$\boxed{24}$