Segments & Congruence

title

Segment—part of a line that consists of two points, called *endpoints*, and all of the points on the line that are between the endpoints

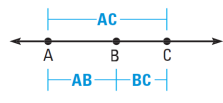➢ Use the endpoints to name a line segment.

G ●————————● H

$\overline{GH}$ or $\overline{HG}$

Length—the distance between the endpoints of a segment
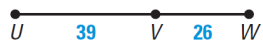
segments

Postulate (or axiom)—a rule that is accepted without proof

Segment Addition Postulate

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

Find *UW*. $39 + 26 = 65$
$UW = 65$
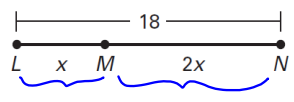
U 39 V 26 W

Find *DE*. $63 - 50 = 13$
$DE = 13$

D E 50 F   (63)

segment addition post

Find the value of *x*.
Then find *LM* and *MN*.

L x M 2x N   (18)

$$x + 2x = 18$$
$$3x = 18$$
$$x = 6$$
$$LM = 6$$
$$MN = 12$$

example

Suppose *K* is between *J* and *L*. Use the Segment Addition Postulate to solve for *x*. Then find *JK* and *KL*.

JK = 7*x* + 2, *KL* = 2*x* − 1, *JL* = 64

$x = 7$

$JK = 51$

$KL = 13$

$$7x+2 + 2x-1 = 64$$
$$9x+1 = 64$$
$$9x = 63$$
$$x = 7$$

example

Congruent segments—segments that have the same length

➤ The symbol for congruence is ≅.

~ : same shape

= : same size

≅ : same shape and size

Lengths are equal.	Segments are congruent.
$AB = CD$	$\overline{AB} \cong \overline{CD}$
"is equal to"	"is congruent to"

congruent

Plot the given points in a coordinate plane. Then determine whether segment *AB* is congruent to segment *CD*.

$\overline{AB} : A(-3,2), B(1,2)$ ✓

$\overline{CD} : C(2,1), D(2,-4)$ ✓

Not ≅

example

Conclusion

1. What is the difference between a line and a segment?

2. Using the Segment Addition Postulate, make a problem for your partner to solve.

3. Trade papers and solve. Discuss with your partner the problems.

4. Questions????

Aug 19-6:33 PM

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Assignment

**Segments and Congruence
Wkst 1.2**

Aug 19-6:35 PM