Date: 8/26/21

Lesson 1.2 Measuring & Constructing Segments

Learning Intent (Target): *Today I will* be able to describe geometric figures & understand equality/congruence of geometric figures.

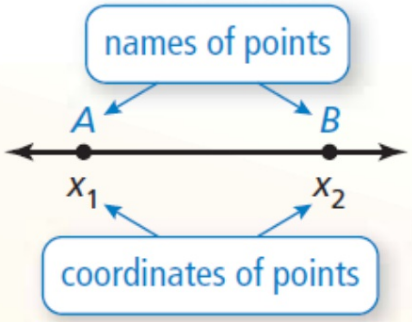
Success Criteria: *I'll know I'll have it when* I'll be able to describe and measure geometric figures using ruler and segment addition postulates.

Accountable Team Task: *Therefore, I can* define key vocabulary terms, matching vocabulary activity, flip chart and workbook independent practice.

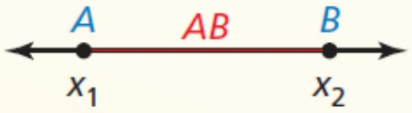
Postulate

Postulate 1.1 Ruler Postulate

The points on a line can be matched one to one with the real numbers. The real number that corresponds to a point is the **coordinate** of the point.



The **distance** between points A and B, written as AB, is the absolute value of the difference of the coordinates of A and B.

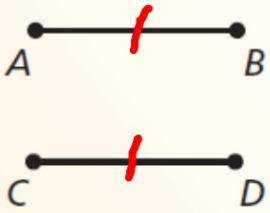


$$AB = |x_2 - x_1|$$

Core Concept

Congruent Segments

Line segments that have the same length are called **congruent segments**. You can say "the length of $\overline{AB}$ is equal to the length of $\overline{CD}$," or you can say "$\overline{AB}$ *is congruent to* $\overline{CD}$." The symbol $\cong$ means "is congruent to."



Lengths are equal.
$AB = CD$

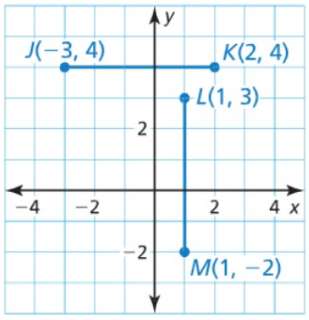
"is equal to"

Segments are congruent.
$\overline{AB} \cong \overline{CD}$

"is congruent to"

Plot $J(-3, 4)$, $K(2, 4)$, $L(1, 3)$, and $M(1, -2)$ in a coordinate plane.

Then determine whether $\overline{JK}$ and $\overline{LM}$ are congruent.



Plot $J(-3, 4)$, $K(2, 4)$, $L(1, 3)$, and $M(1, -2)$ in a coordinate plane. Then determine whether $\overline{JK}$ and $\overline{LM}$ are congruent.

SOLUTION

Plot the points, as shown. To find the length of a horizontal segment, find the absolute value of the difference of the x-coordinates of the endpoints.

$JK = |2 - (-3)| = 5$ Ruler Postulate

To find the length of a vertical segment, find the absolute value of the difference of the y-coordinates of the endpoints.

$LM = |-2 - 3| = 5$ Ruler Postulate

▶ $\overline{JK}$ and $\overline{LM}$ have the same length. So, $\overline{JK} \cong \overline{LM}$.

5. Plot $A(-2, 4)$, $B(3, 4)$, $C(0, 2)$, and $D(0, -2)$ in a coordinate plane.

Then determine whether $\overline{AB}$ and $\overline{CD}$ are congruent.

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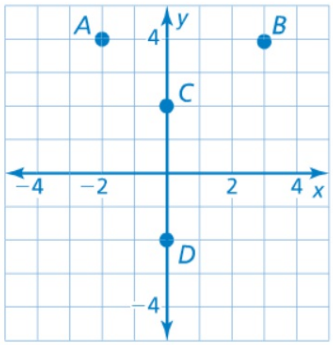

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