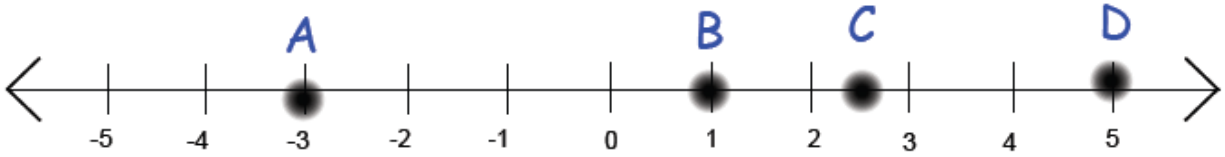
DAY 3 NOTES
1.2: MEASURING AND CONSTRUCTING SEGMENTS

- ❒ Target: Use length and midpoint of a segment.
- ❒ Target: Construct midpoints and congruent segments.



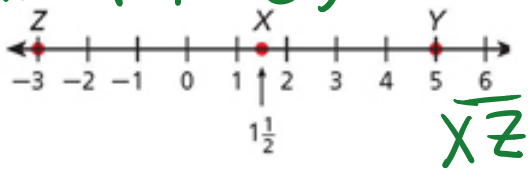
Given the picture, find the distance between the following points:

1. B and D = $|1-5| = |-4| = \boxed{4}$
2. C and B = $|2.5-1| = |1.5| = \boxed{1.5}$
3. A and B = $|-3-1| = |-4| = \boxed{4}$
4. B and A = $|1--3| = |4| = \boxed{4}$

Distance: Absolute value of the difference of the coordinates. Absolute value: distance from zero on the number line.

Distance Notation: Two capital letters next to each other. Ex: AB (distance from A to B)

EXAMPLE: Find XY and XZ.



$\overline{XY} = |1\frac{1}{2} - 5|$

$= |-3.5|$

$\boxed{\overline{XY} = 3.5}$

$\overline{XZ} = |1\frac{1}{2} + +3|$

$\overline{XZ} = |4\frac{1}{2}|$

$\boxed{\overline{XZ} = 4\frac{1}{2}}$

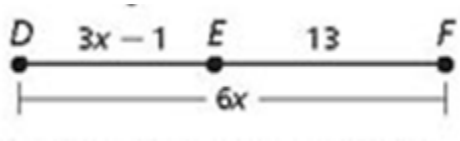
Congruent Segments: Segments that have the same length.

Symbol for Congruent: $\cong$; Ex: $AB \cong CD$ if they are congruent.

Between:

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

EXAMPLE: E is between D and F. Find x.



$3x-1+13=6x$

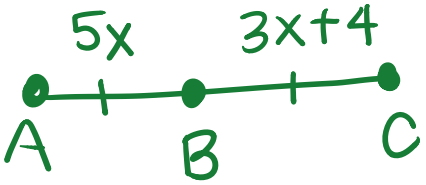
$12=3x$

$\boxed{4=x}$

Midpoint:

A point that bisects or divides a segment into two congruent segments.

EXAMPLE: B is the midpoint of $\overline{AC}$, AB = 5x, and BC = 3x + 4. Find AB, BC, and AC.



$5x=3x+4$

$2x=4$

$x=2$

$\boxed{\begin{array}{l} AB=10 \\ BC=10 \\ AC=20 \end{array}}$

Segment Bisector:

Ray, segment, or line that intersects a segment at it's midpoint.