

Vocabulary

In Geometry, a rule that is accepted without proof is called a **postulate** or **axiom**.

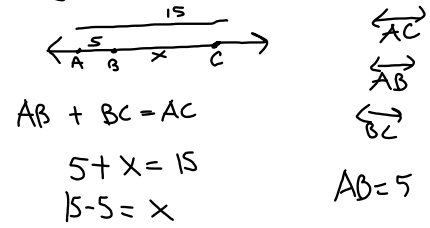
Postulate 1 Ruler Postulate: The points on a line can be matched one to one with the real numbers. The real number that corresponds to a point is the **coordinate** of the point. The **distance** between points A and B , written as AB , is the absolute value of the difference of the coordinates of A and B .

When three points are collinear, you can say that one point is **between** the other two.

Postulate 2 Segment Addition Postulate: If B is between A and C , then $AB + BC = AC$. If $AB + BC = AC$, then B is between A and C .

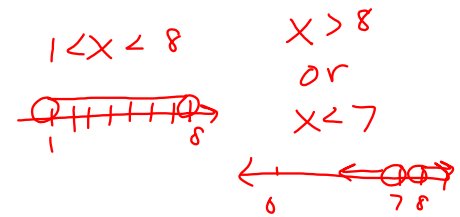
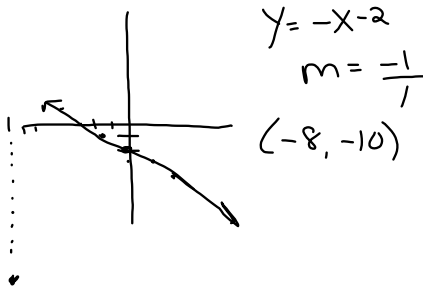
Line segments that have the same length are called **congruent segments**.

Segment Addition Postulate



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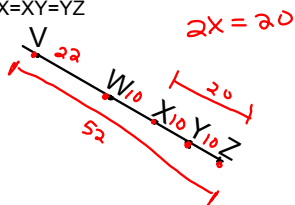
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In the diagram, points V, W, X, Y, Z , are collinear,
 $VZ = 52$, $XZ = 20$, and $WX = XY = YZ$

Find:

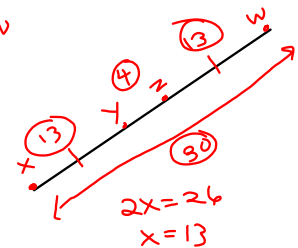
- WX 10
- VW 22
- WY 20
- VX 32
- WZ 30
- VY 42



$XY \cong ZW$

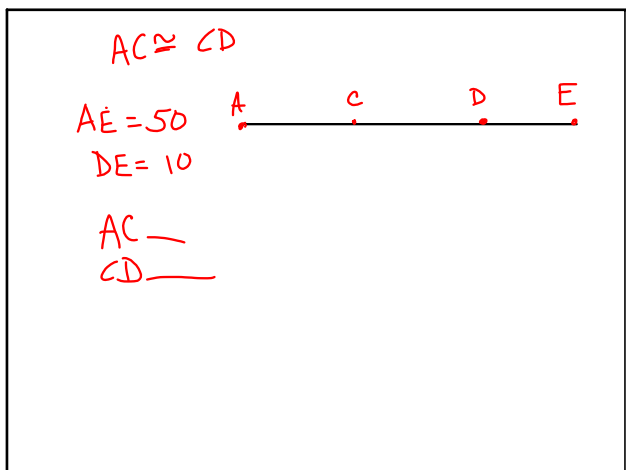
Congruent \cong

- $YZ = 4$
- $XW = 30$
- $XY = \underline{\hspace{1cm}}$
- $ZW = \underline{\hspace{1cm}}$

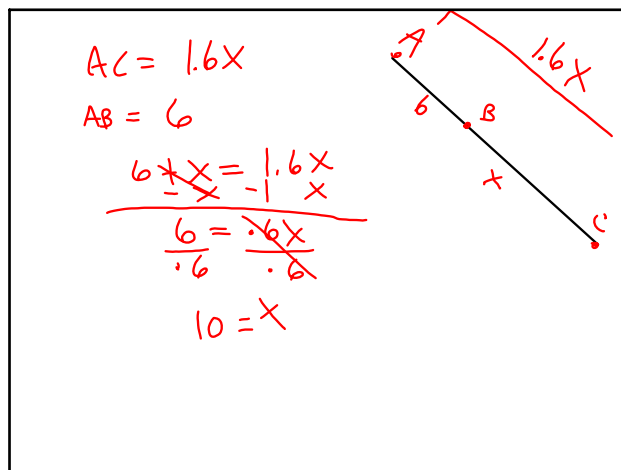


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Vocabulary

The **midpoint** of a segment is the point that divides the segment into two congruent segments.

A **segment bisector** is a point, ray, line, line segment, or plane that intersects the segment at its midpoint.

A midpoint or a segment bisector *bisects* a segment.

The Midpoint Formula: If $A(x_1, y_1)$ and $B(x_2, y_2)$ are points in a coordinate plane, then the midpoint M of \overline{AB} has coordinates $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$.

The Distance Formula: If $A(x_1, y_1)$ and $B(x_2, y_2)$ are points in a coordinate plane, then the distance between A and B is $AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

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