

Name _____ Date _____ Period: _____

§1.3 Line Segments

Today we will learn how to calculate line segments and apply the definition of congruent line segments to find missing values.

Definitions:

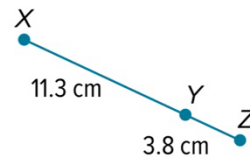
Line segment-

Betweenness of points-

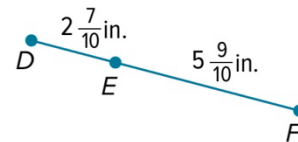
Congruent-

Congruent segments-

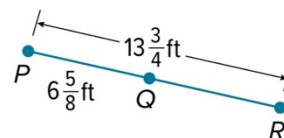
Example 1.3.1: Find the measure of \overline{XZ} .



Practice 1.3.2: Find the measure of \overline{DF} .

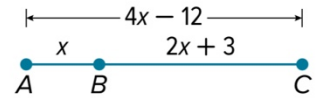


Example 1.3.3: Find the measure of \overline{QR} .



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Example 1.3.4: Find the value of BC if B is between AC , $AC = 4x - 12$, $AB = x$, and $BC = 2x + 3$.



Activity 1.3.5: SPACE NEEDLE Darrell is visiting the Space Needle in Seattle, Washington. He knows that the total height of the Space Needle is 605 feet. The distance from the ground to the observation deck is 10 feet more than six times the distance from the observation deck to the top of the Space Needle. Help Darrell find the distance from the ground to the observation deck.

Example 1.3.6: Find the value of x if Q is between P and R , $PQ = 6x + 20$, $QR = 2(x + 6)$, and $\overline{PQ} \cong \overline{QR}$. Write the justifications in the correct order.

$PQ = QR$ _____

$6x + 20 = 2(x + 6)$ _____

$6x + 20 = 2x + 12$ _____

$6x + 20 - 2x = 2x + 12 - 2x$ _____

$4x + 20 = 12$ _____

$4x + 20 - 20 = 12 - 20$ _____

$4x = -8$ _____

$\frac{4x}{4} = \frac{-8}{4}$ _____

$x = -2$ _____

Reason Bank	
Definition of Congruence	Simplify
Divide each side by 4	Substitution
Subtract $2x$ from each side	Subtract 20 from each side.
Distributive Property	