LESSON 1-2

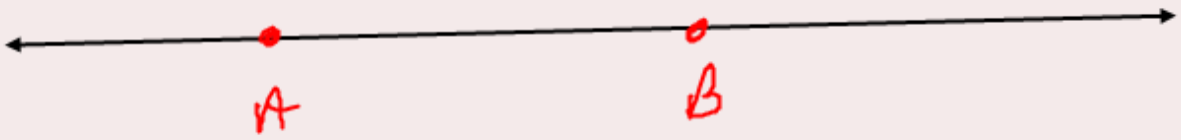
Linear Measure

:: Then :: Now :: Why?

You will identify and model line segments, congruent segments, and betweenness of points

You will calculate measures

Line Segment – has 2 endpoints and can be measured



$\overline{AB}$ ← "segment AB"

AB ← distance (numerical amount)

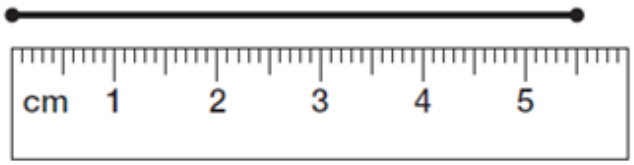
AB = 24 cm

1-2 Skills Practice

Linear Measure

Find the length of each line segment or object.

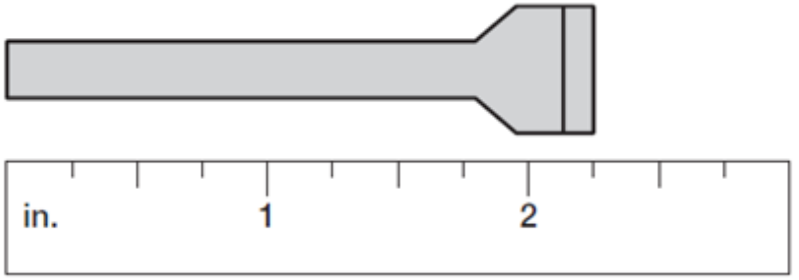
1.



$5\frac{1}{2}$ cm

5.5 cm

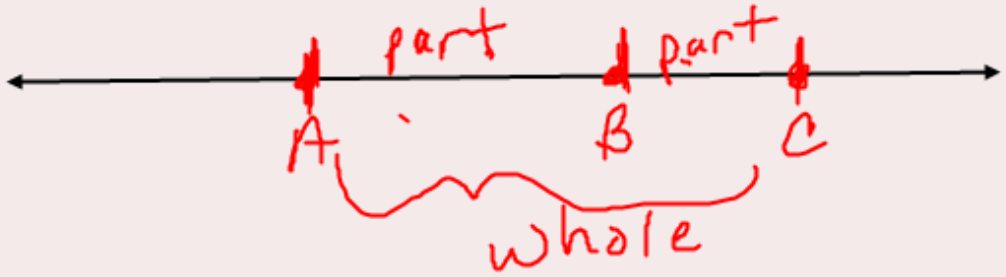
2.



$2\frac{1}{4}$ in

$2\frac{1}{4}$"

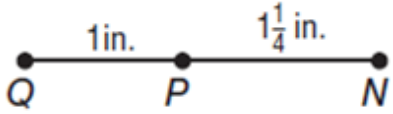
Betweenness of Points – use when pts are collinear



part + part = whole

Find the measurement of each segment. Assume that each figure is not drawn to scale.

3. $\overline{NQ}$

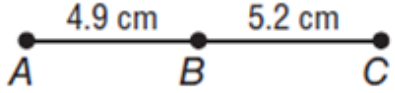


$2\frac{1}{4}$ in.

$\frac{9}{4}$ in

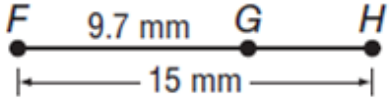
2.25 in

4. $\overline{AC}$



10.1 cm

5. $\overline{GH}$



$$\begin{array}{r} 15 \\ -\ 9.7 \\ \hline 5.3 \text{ mm} \end{array}$$

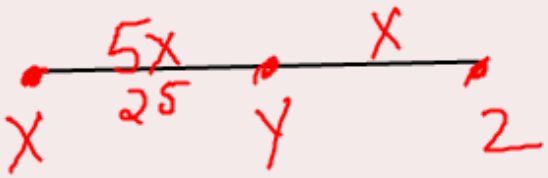
ALGEBRA **Find the value of x and YZ if Y is between X and Z.**

part part

6. $XY = 5x$, $YZ = x$, and $XY = 25$

part + part = whole

7. $XY = 12$, $YZ = 2x$, and $XZ = 28$



$5x = 25$

$\frac{5x}{5} = \frac{25}{5}$

$x = 5$

$YZ = 5$

$12 + 2x = 28$

$-12 \quad -12$

$2x = 16$

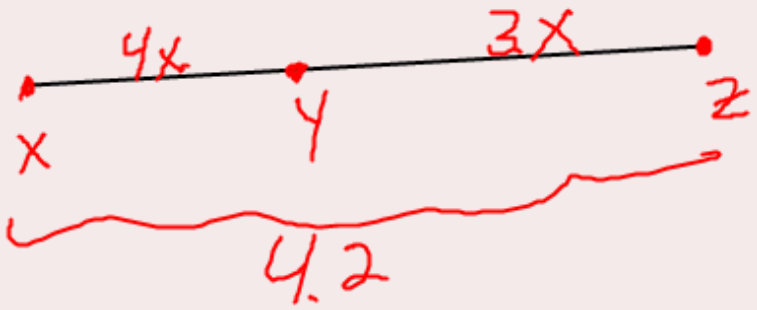
$\frac{2x}{2} = \frac{16}{2}$

$x = 8$

$YZ = 16$

part + part = whole

8. $XY = 4x$, $YZ = 3x$, and $XZ = 42$



$4x + 3x = 42$

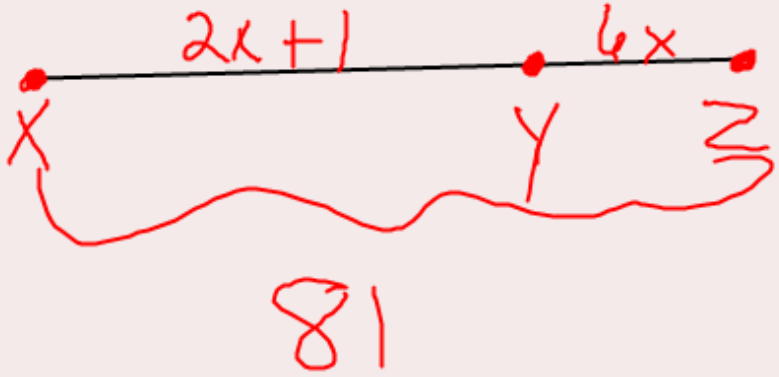
$\frac{7x}{7} = \frac{42}{7}$

$x = 6$

$YZ = 3(6) = 18$

part part whole

9. $XY = 2x + 1$, $YZ = 6x$, and $XZ = 81$



$2x+1 + 6x = 81$

$-1 \quad\quad -1$

$8x + 1 = 81$

$-1 \quad\quad -1$

$\frac{8x}{8} = \frac{80}{8}$

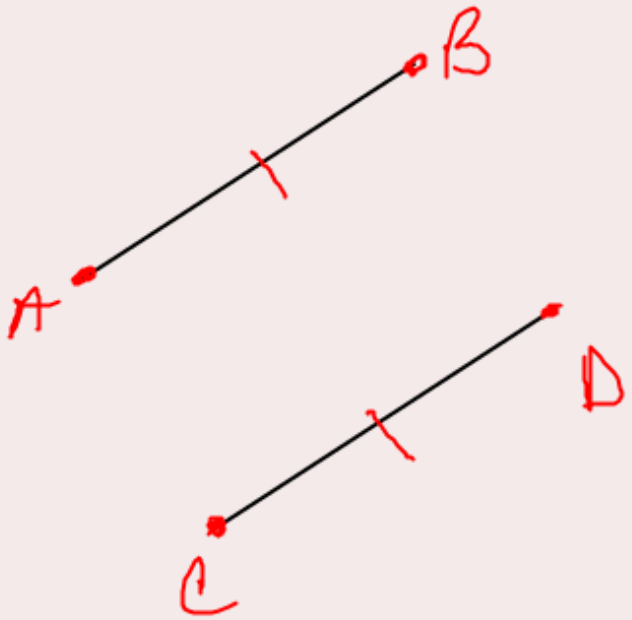
$x = 10$

$YZ = 6(10) = 60$

Congruent segments

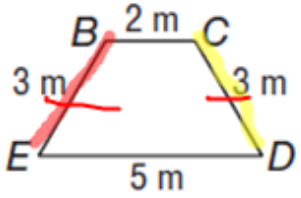
↳ same measure

$\overset{\sim}{AB} \cong \overline{CD}$



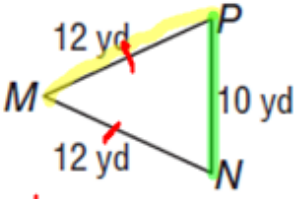
Determine whether each pair of segments is congruent.

10. $\overline{BE}$, $\overline{CD}$



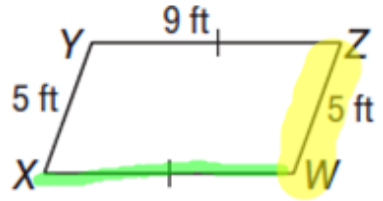
yes

11. $\overline{MP}$, $\overline{NP}$



NO

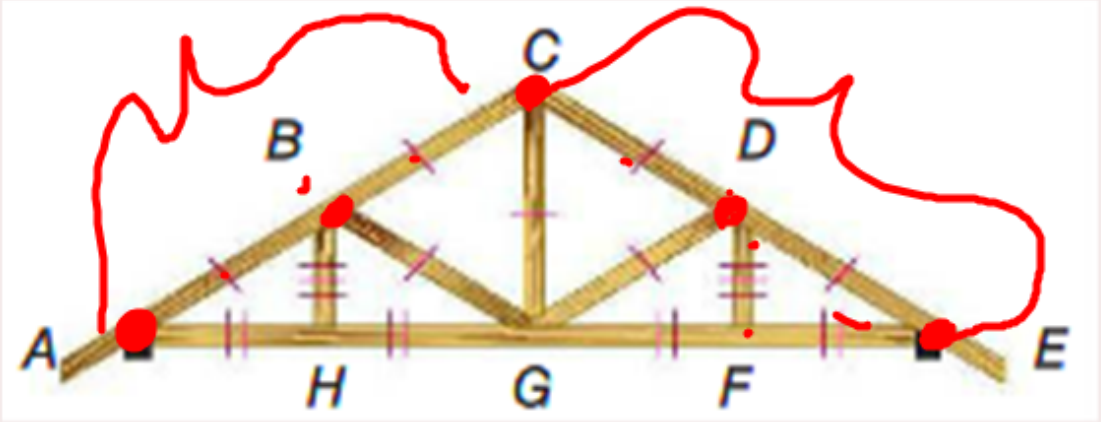
12. $\overline{WX}$, $\overline{WZ}$



9 ft

NO

TRUSSES A truss is a structure used to support a load over a span, such as a bridge or the roof of a house. List all of the congruent segments in the figure.



$\overline{CA} \cong \overline{CE}$

$\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{DE} \cong \overline{BG} \cong \overline{GD}$

$\overline{BH} \cong \overline{DF}$