

On the back of the points, lines, and planes scavenger hunt from yesterday, copy the following chart. Then get a ruler and measure each length, filling out the chart.

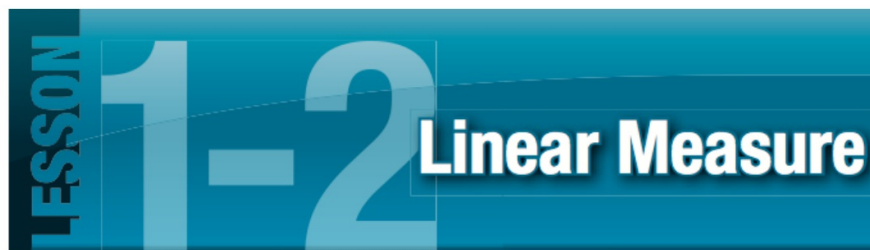
| | | | |
|--|------------------------|--|----------------|
| Measure the width of a student desk in inches | 23 in 24 in 1 in | Measure the distance between your eyes in centimeters | 4, 5, 3 |
| Measure the height of a student desk in feet | 2 ft | Measure the length of your arm in inches | 20 |
| Measure the height of the classroom door frame in feet | 7½ ft | Measure the circumference of your head in centimeters | 43 cm |
| Estimate the length of the classroom end-to-end in feet | 23 ft 38 ft | Estimate the height of the classroom ceiling in yards | 3 yds 4 yds |

$$\begin{array}{r} 16\frac{1}{2} \times 28 \\ \hline \end{array}$$

RULERS

$$\begin{array}{r} 3\cancel{0} \\ 12 \overline{)462} \\ \underline{36} \\ 102 \\ \underline{102} \\ 0 \end{array}$$

$$\begin{array}{r} 16.5 \\ + 2.8 \\ \hline 19.3 \end{array}$$

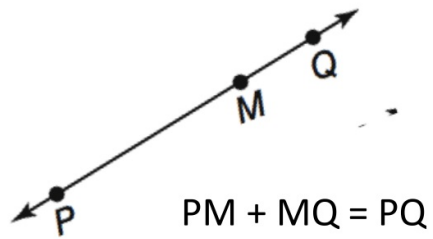


We have:
Identified and modeled points, lines and planes.
Measured segments.

Today we will:
Calculate with measures to find unknown lengths and solve equations.

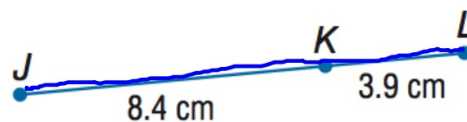
Betweenness

If a point is between two other points on a line, the whole segment is the sum of the two smaller segments.

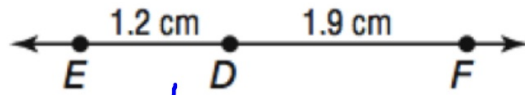


Find JL . Assume that the figure is not drawn to scale.

$$\begin{array}{r} 8.4 \\ + 3.9 \\ \hline 12.3 \text{ cm} \end{array}$$

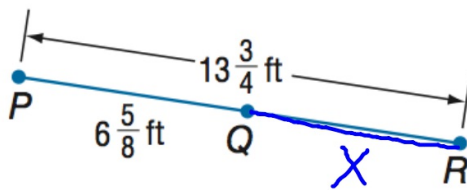


Find EF .



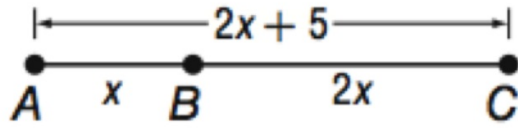
$$\begin{array}{r} 1.2 \\ + 1.9 \\ \hline 3.1 \text{ cm} \end{array}$$

Find QR . Assume that the figure is not drawn to scale.



$$\begin{array}{r} \cancel{6 \frac{5}{8}} + X = 13 \frac{3}{4} \frac{6}{8} \quad \frac{3}{4} = \frac{6}{8} \\ - \cancel{6 \frac{5}{8}} \\ \hline 7 \frac{1}{8} \text{ ft} \end{array}$$

Find x and AC.



$$x + 2x = 2x + 5$$

$$\begin{array}{r} 3x = 2x + 5 \\ -2x \quad -2x \\ \hline \end{array}$$

$$x = 5$$

$$AC = 2x + 5$$

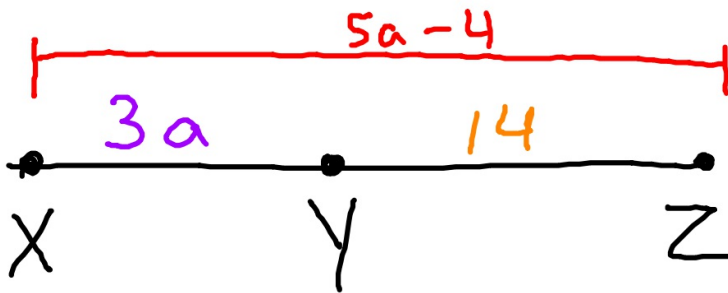
$$AC = 2(5) + 5$$

$$10 + 5$$

$$AC = 15$$

Find the value of a and XY if Y is between X and Z .

$XY = 3a$, $XZ = 5a - 4$, and $YZ = 14$.



$$XY = 3a$$

$$3(9)$$

$$XY = 27$$

$$\begin{array}{r} 3a + 14 = 5a - 4 \\ -3a \quad -3a \\ \hline \end{array}$$

$$\begin{array}{r} 14 = 2a - 4 \\ +4 \quad +4 \\ \hline \end{array}$$

$$\frac{18}{2} = \frac{2a}{2}$$

$$9 = a$$

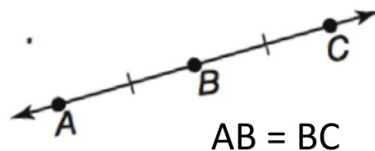
Find the value of x and RS if S is between R and T .

$$RS = 2x, ST = 5x + 4, \text{ and } RT = 32$$

Congruent segments

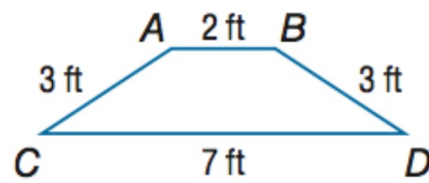
If two segments have the same length, they are called **congruent segments**. This is indicated by slashes in a picture.

AB and BC are congruent segments.



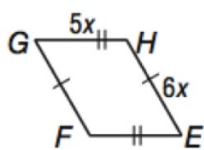
Determine whether each pair of segments is congruent.

$\overline{AC}, \overline{BD}$

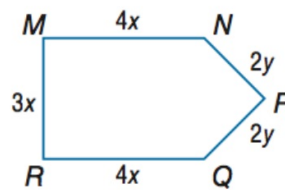


Determine whether each pair of segments is congruent.

$\overline{GF}, \overline{FE}$



$\overline{MN}, \overline{RQ}$



$\overline{EH}, \overline{FG}$

