Section 1.2 & 1.3: Segments
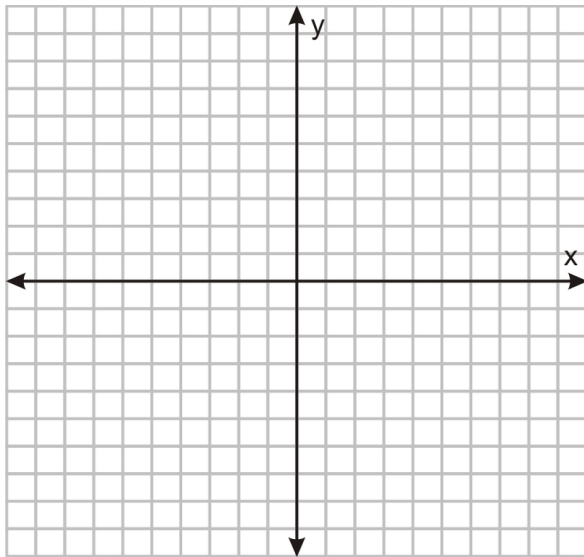
Line segments that have the same length are called_____.

You can say "the length of _____ is equal to the length of _____" or you can say "_____ is congruent to _____". The symbol _____ means "is congruent to".

Draw two segments that are congruent to each other using a ruler.

Plot $J(-3, 4)$, $K(2, 4)$, $L(1, 3)$, and $M(1, -2)$ in a coordinate plane. Then determine whether JK and LM are congruent.

Segment Addition Postulate: _____

_____

EXAMPLE 3   Using the Segment Addition Postulate

a. Find *DF*.

D —23— E —35— F

b. Find *GH*.

|—— 36 ——|

F —21— G   H

MATHEMATICAL CONNECTIONS Point *S* is between points *R* and *T* on $\overline{RT}$. Use the information to write an equation in terms of *x*. Then solve the equation and find *RS*, *ST*, and *RT*.
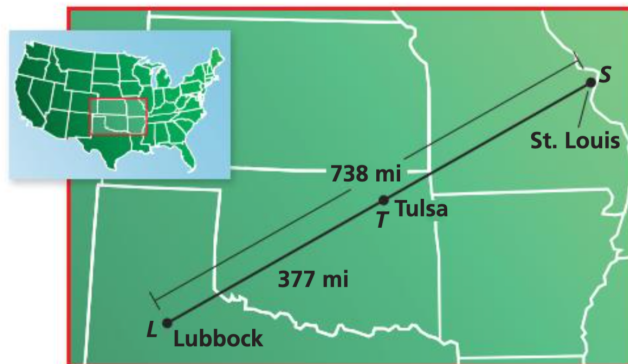
a. $RS = 2x + 10$
$ST = x - 4$
$RT = 21$

EXAMPLE 4   Using the Segment Addition Postulate

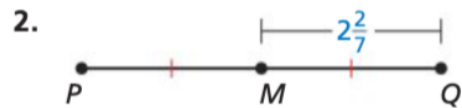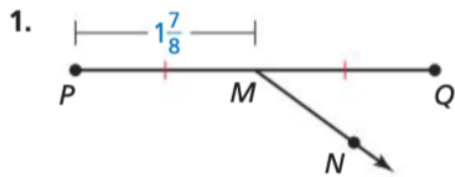The cities shown on the map lie approximately in a straight line. Find the distance from Tulsa, Oklahoma, to St. Louis, Missouri.
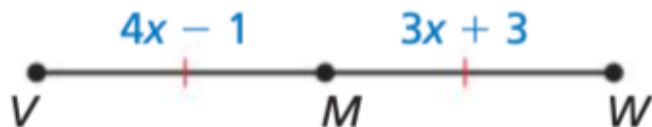

S

St. Louis

738 mi

Tulsa
T

377 mi

L Lubbock

Midpoint and Segment Bisectors:

Midpoint: _____

Segment Bisector: _____

1.

$\vdash$——$1\frac{7}{8}$——$\dashv$

P   M   Q

N

2.

$\vdash$——$2\frac{2}{7}$——$\dashv$

P   M   Q

Point M is the midpoint of $\overline{VW}$. Find the length of $\overline{VM}$.

$4x - 1$ $3x + 3$

V   M   W

Midpoint formula:

a. The endpoints of $\overline{RS}$ are $R(1, -3)$ and $S(4, 2)$. Find the coordinates of the midpoint M.

b. The midpoint of $\overline{JK}$ is $M(2, 1)$. One endpoint is $J(1, 4)$. Find the coordinates of endpoint K.

Distance Formula:

EXAMPLE 4 **Using the Distance Formula**

Your school is 4 miles east and 1 mile south of your apartment. A recycling center, where your class is going on a field trip, is 2 miles east and 3 miles north of your apartment. Estimate the distance between the recycling center and your school.