Your Name

Mrs. Theo

9/2/21

Notes

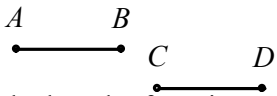
1.2 Segment Addition

Lesson Objectives

- Draw and measure segments
- Use the segment addition postulate
- Apply concept of congruence to solve problems

Congruent Segments

Line segments that have the same length are called ***congruent segments***.
You can express this in 3 different ways:



1. "The length of AB is equal to the length of CD"

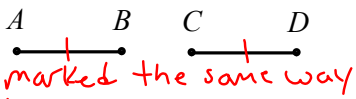
a number value

$AB \cong CD$

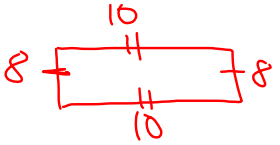
2. "Segment AB is congruent to segment CD."

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

3. You can use "tick marks" to show congruence.



marked the same way

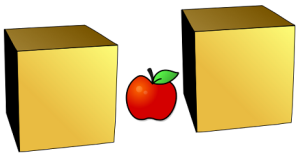


not a rectangle

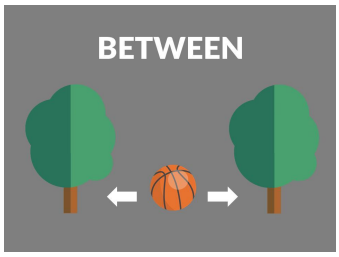
Between

1 2 3

2 is between 1 and 3.



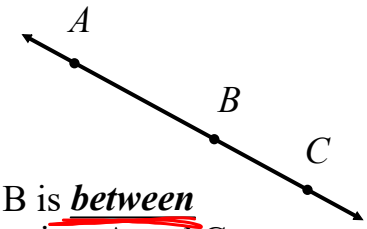
The apple is between the two boxes.



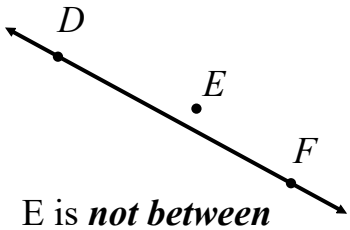
The ball is between the trees.

Betweenness of Points

When 3 points are collinear, form a straight line
you can say that one point is ***between*** the other 2.

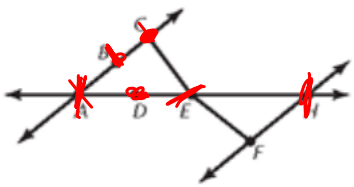


B is ***between*** points A and C.



E is ***not between*** points D and F.

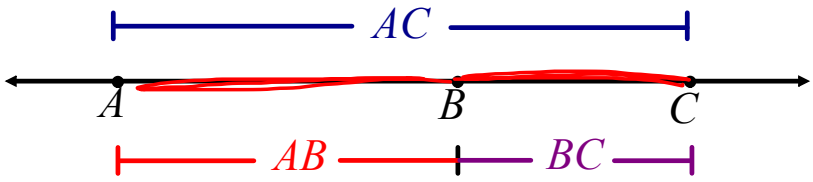
27. USING STRUCTURE Determine whether the statements are true or false. Explain your reasoning.



a. B is between A and C.
True, B is collinear w/A & C
b. C is between B and E.
False, C, B, E are not collinear
c. D is between A and H.
True, D, A, H are collinear
d. E is between C and F.
False, C and F are not collinear two line segments that meet

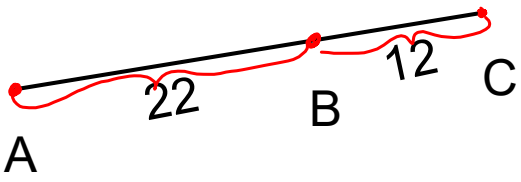
Segment Addition Postulate (2 parts)

- If B is between points A and C, then AB + BC = AC.
- If AB + BC = AC, then B is between points A and C.

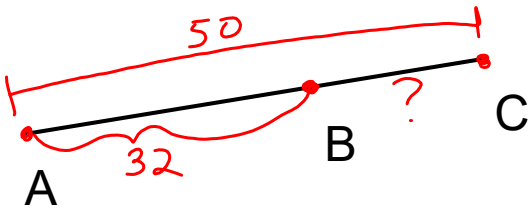


In other words:

The smaller parts of the segment add up to equal the whole thing.



AC = AB + BC
whole = part + part
AC = 22 + 12
AC = 34

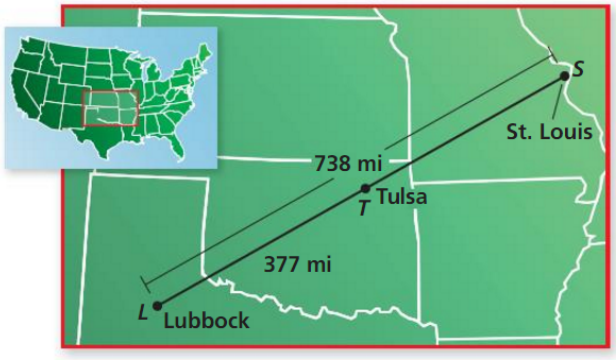


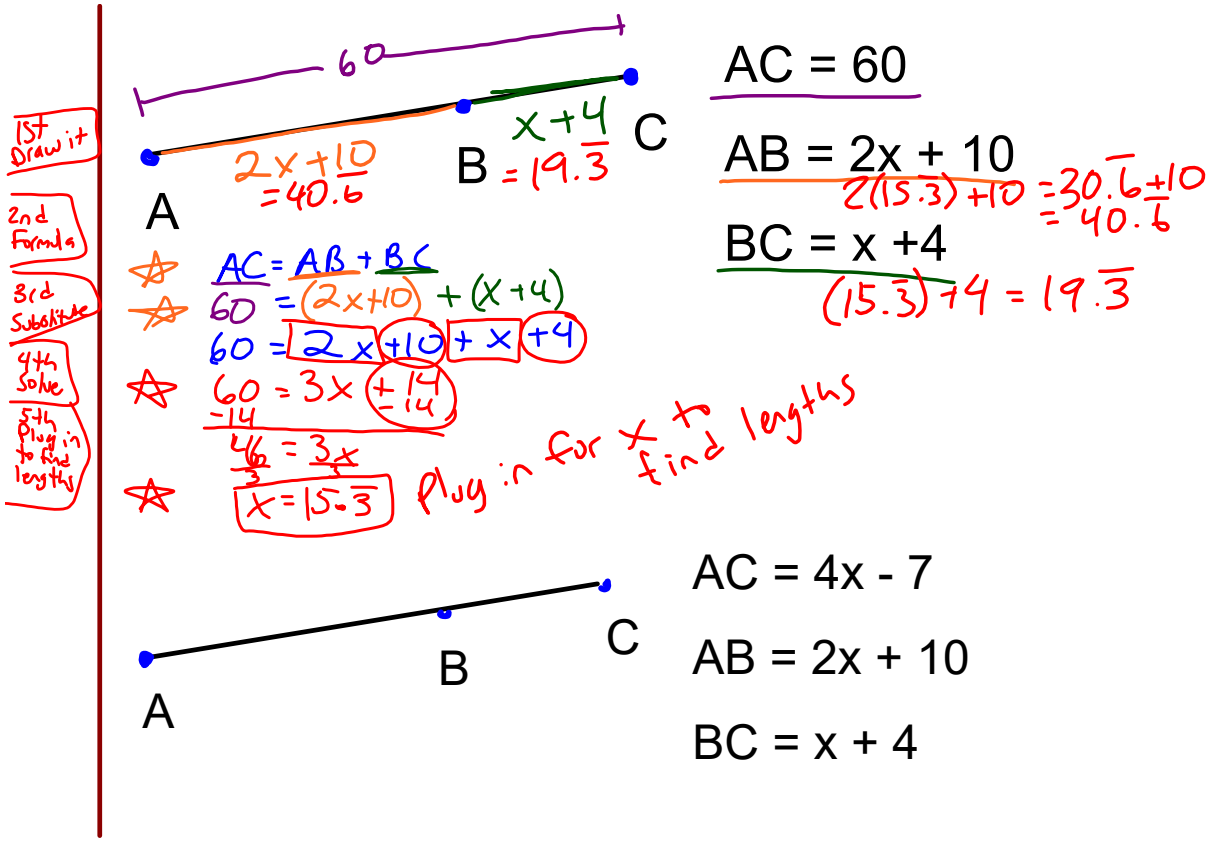
AC = 50
AB = 32
BC =

AC = AB + BC
50 = 32 + BC
-32 -32
18 = BC

EXAMPLE **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.





AC = 4x - 7

AB = 2x + 10

BC = x + 4

Homework: (these are from the textbook 1.2 pg.16 #3-6,15,16,17,20,21,27,29)

Measuring on your paper...

In Exercises 3–6, use a ruler to measure the length of the segment to the nearest tenth of a centimeter.
(See Example 1.)

3. 4.5 cm

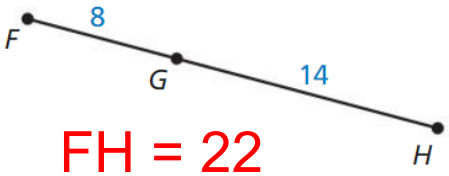
4. 7.75 cm

5. 5.75 cm

6. 9 cm

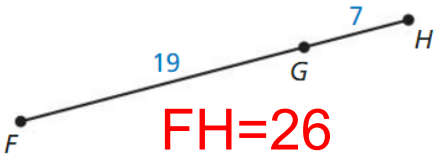
In Exercises 15–22, find *FH*. *(See Example 3.)*

15.



FH = 22

16.

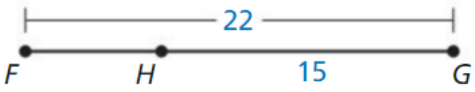


FH=26

17.

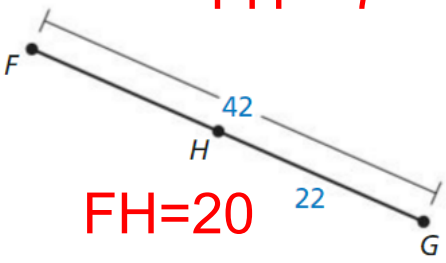
FH=23

20.



FH = 7

21.



FH=20

29. **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. $RS = 2x + 10$
$ST = x - 4$
$RT = 21$

X=5

RS = 20

ST=1

RT=21

b. $RS = 3x - 16$
$ST = 4x - 8$
$RT = 60$

X=12

RS = 20

ST = 40

RT = 60

c. $RS = 2x - 8$
$ST = 11$
$RT = x + 10$

X = 7

RS = 6

ST = 11

RT=17

d. $RS = 4x - 9$
$ST = 19$
$RT = 8x - 14$

X = 6

RS = 15

ST = 19

RT = 34