Unit 1 Day 11

Quiz 2

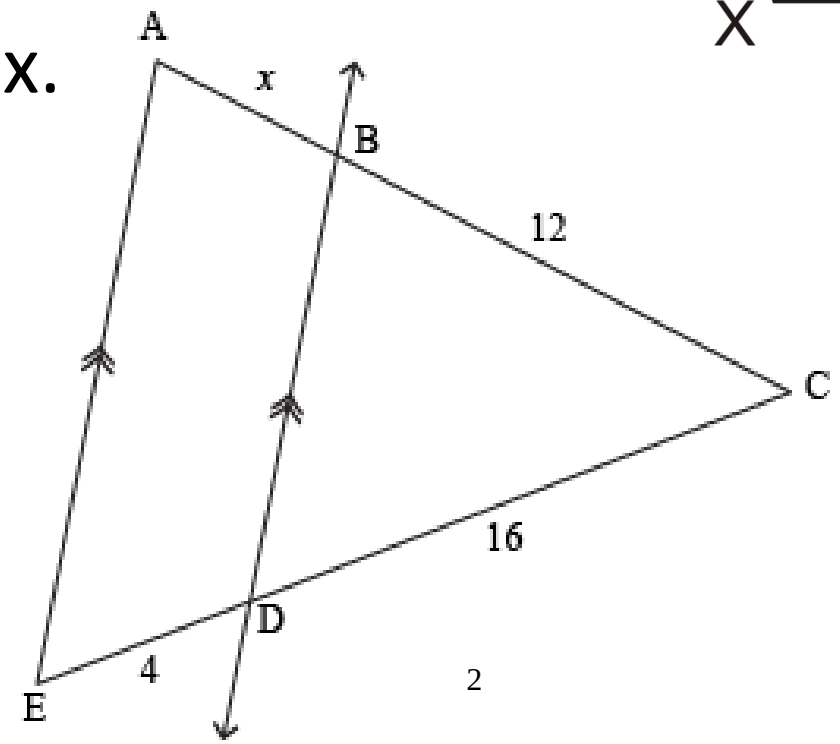
& Notes on Segment and Angle Addition Postulate
(and drawing diagrams)

Warm Up!

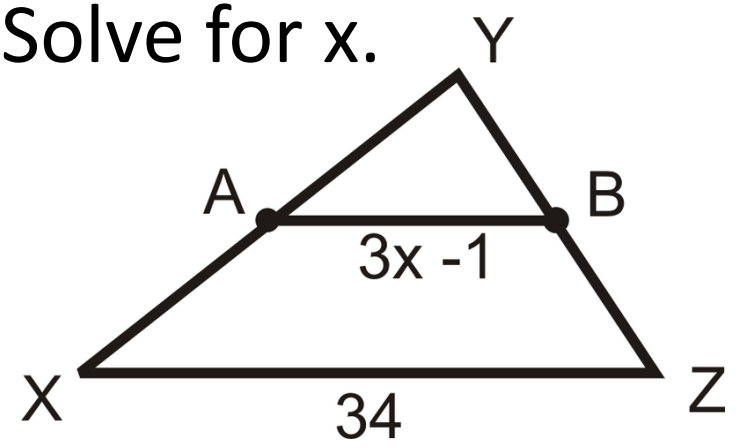
1) Multiply. (x + 5)(x + 7)

2) Solve for x. $\frac{x}{x+6} = \frac{x+1}{x-2}$

3) Solve for x.



4) AB is a midsegment. Solve for x.



Warm Up continues!! #5 – 7 on next slide!

Warm Up (continued)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

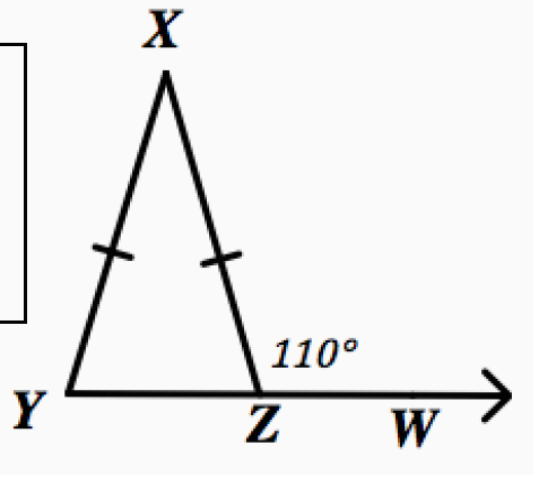
Warm-Up: Express answers as decimals

5. **Prove or Disprove**: Is the triangle with vertices R (-2, -2), S (1, 4), and T (4 ,-5) an equilateral triangle. How do you know?

6. **Prove or Disprove:** Are two triangles are congruent? ΔABC has the vertices A (-4, 1), B (-3, 4), and C (-1, 1). ΔDEF has the vertices D (2, -3), E (5, -2), and F (2, 0).

7. **Error Analysis:** Two students are asked to find the angle measures of ΔXYZ, given that ΔXYZ is isosceles. Their work is shown below. Is either answer correct? Explain your reasoning.

Esteban's Answer	Dashan's Answer
$m\angle Z = 70°$. Since an isosceles triangle has two congruent angles, $m\angle X = m\angle Y = 55°$	$m\angle Z = 70°$. Since base angles are congruent, $m\angle Y = 70°$ also. This leaves $40°$ for $m\angle X$.



Warm Up!

1) Multiply. (x + 5)(x +7)

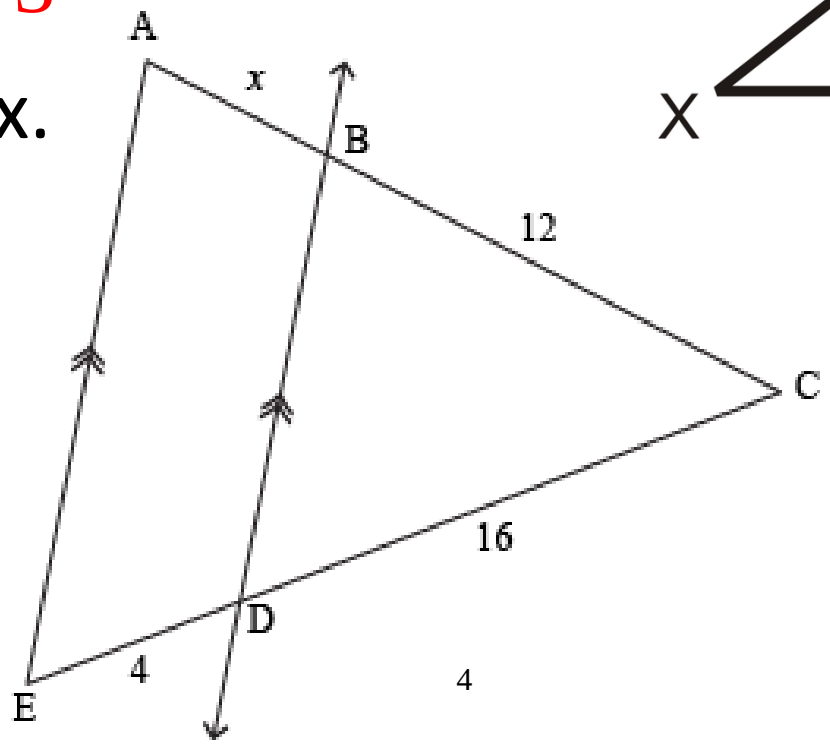
$x^2 + 12x + 35$

2) Solve for x. $\frac{x}{x+6} = \frac{x+1}{x-2}$

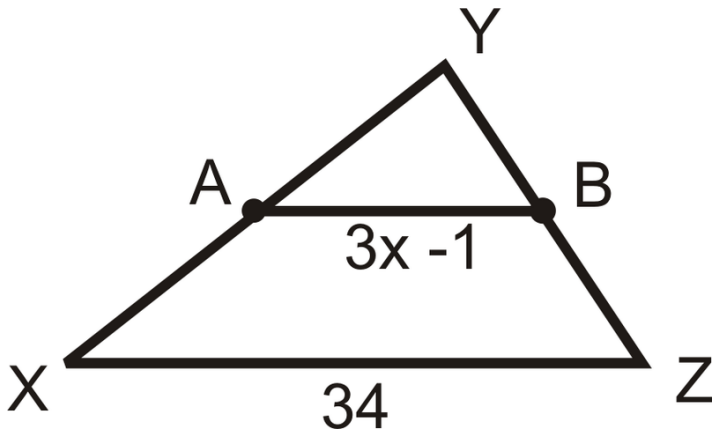
$x = -2/3$

3) Solve for x.

$x = 3$



4) AB is a midsegment.



$x = 6$

Warm Up (continued)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Warm-Up: Express answers as decimals

5. **Prove or Disprove**: Is the triangle with vertices R (-2, -2), S (1, 4), and T (4 ,-5) an equilateral triangle. How do you know?

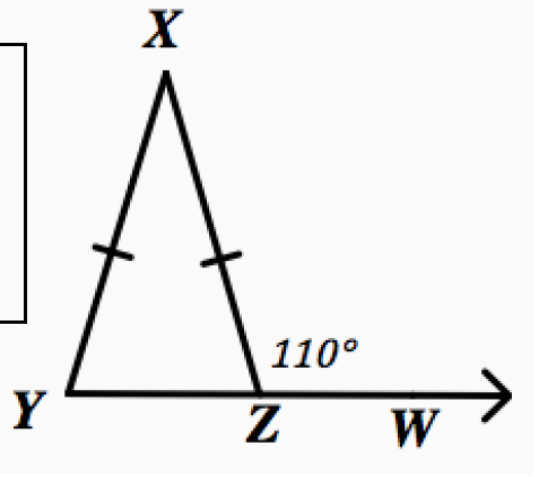
Not equilateral b/c the sides are RS ~ 6.71, ST ~ 9.49, TR ~ 6.71

6. **Prove or Disprove:** Are two triangles are congruent? ΔABC has the vertices A (-4, 1), B (-3, 4), and C (-1, 1). ΔDEF has the vertices D (2, -3), E (5, -2), and F (2, 0).

The triangles are congruent b/c the sides are 3, 3.605, 3.1622

7. **Error Analysis:** Two students are asked to find the angle measures of ΔXYZ, given that ΔXYZ is isosceles. Their work is shown below. Is either answer correct? Explain your reasoning.

Esteban's Answer	Dashan's Answer
$m\angle Z = 70°$. Since an isosceles triangle has two congruent angles, $m\angle X = m\angle Y = 55°$	$m\angle Z = 70°$. Since base angles are congruent, $m\angle Y = 70°$ also. This leaves 40° for $m\angle X$.



Dashan is correct.

Tonight's Homework

Packet p. 31-32 Odd

Packet p. 33-34 Even

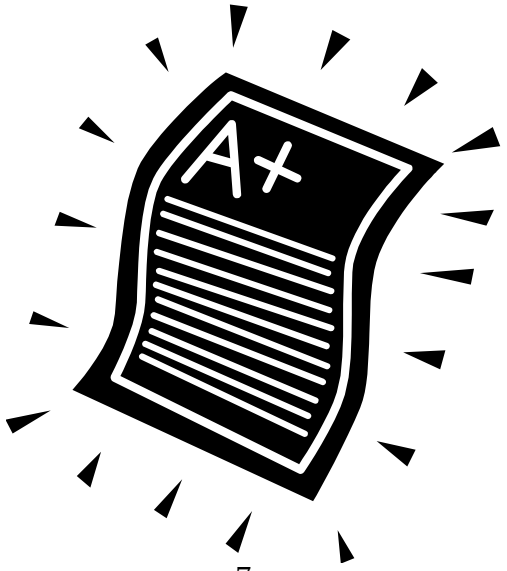
Finish Notes p. 41

***Write this on your Cover Sheet OR Agenda OR Take a Picture of it!!!**

We'll come back and discuss questions from last night's HW after today's notes, if time allows.

Test Reminder!

The Test will be Monday 09/19/2016!!

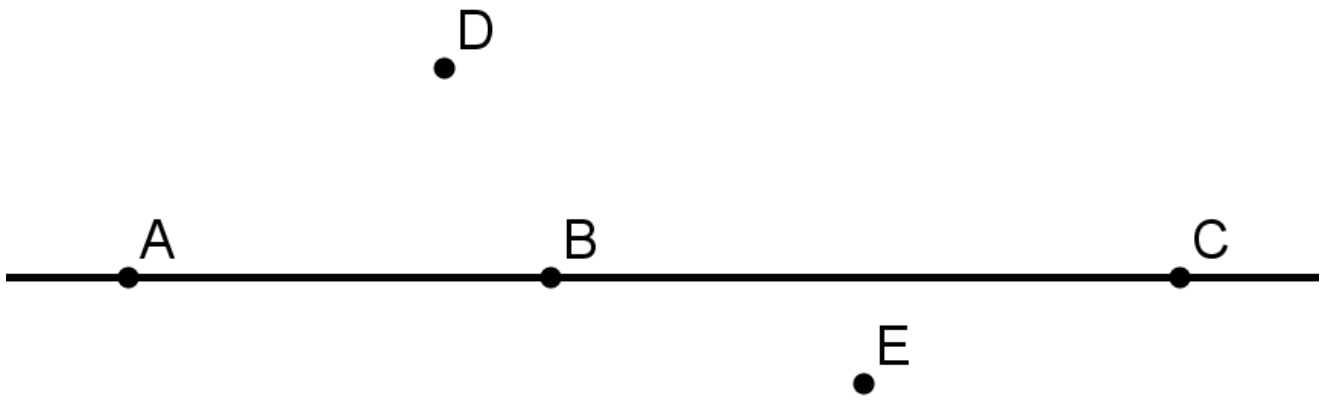


The Lesson

The word **between** in Geometry has a special meaning: a point is between two others if all three points are collinear (on the same line) and it is "between" the other two.

Example:

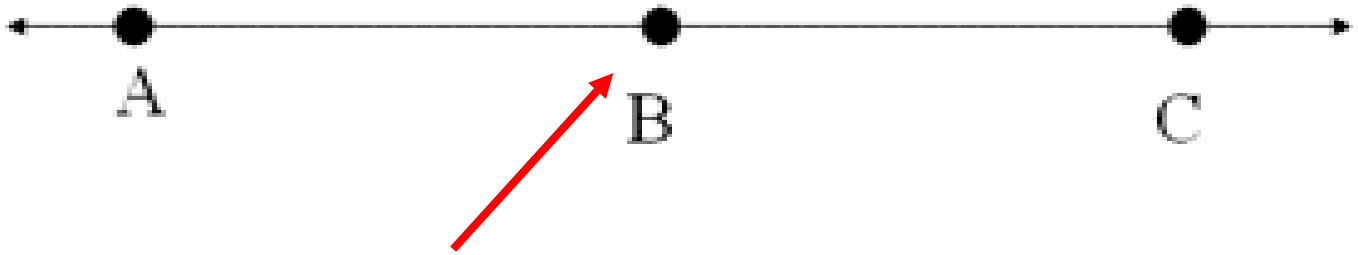
1. Is B between A and C? **Yes.**
2. Is D between A and C? **No. D is non-collinear.**
3. Is E between A and C? **No. E is non-collinear.**



Segment Addition Postulate:

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

Example: If AB = 5, and BC = 6, then AC = **11**



Be careful! Just because B "looks like" it's in the middle doesn't mean it's a midpoint! That must be stated in the problem OR marked in the diagram!!

Angle Addition Postulate

If C is in the interior of $\angle DAB$, then

$$m\angle DAC + m\angle CAB = m\angle DAB$$

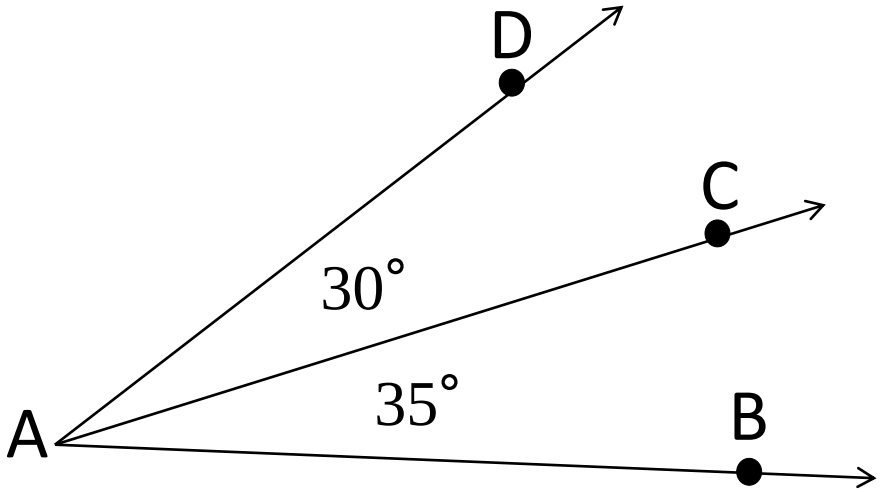
If no diagram is given, ALWAYS draw one first!!

Find m∠DAB, given

m∠DAC = 30° and

m∠CAB = 35°

$m\angle DAB = 65°$



Practice: Segment Addition Postulate

Points A, B and C are collinear. Point B is between A and C. Solve for x.

1. $AC = 3x + 3$, $AB = -1 + 2x$, and $BC = 11$. Find x.

2. $AC = 22$, $BC = x + 14$, and $AB = x + 10$. Find x.

If no diagram is given, ALWAYS draw one first!!

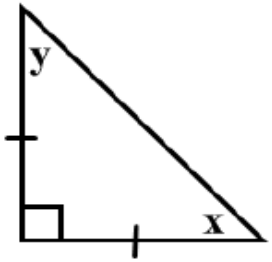
X = 7

X = -1

Day 10 Homework Answers
p. 31-32 Even

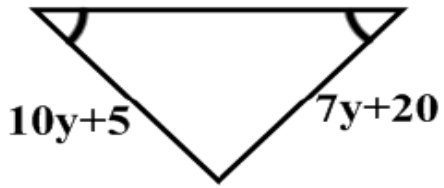
4. Find the values of the variables in the diagrams below:

a.



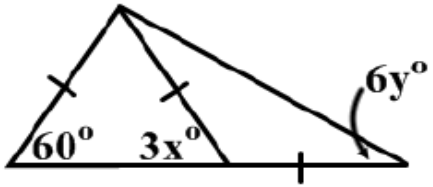
x = y = 45

b.



y = 5

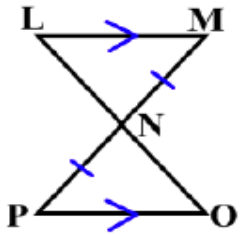
c.



x = 20, y = 5

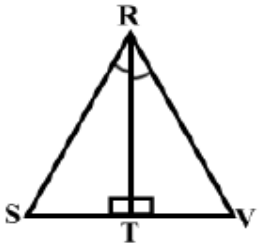
6. Write the name of the postulate/theorem used to prove the following triangles congruent:

a.



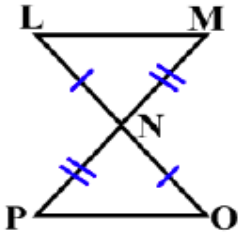
ASA (if use vertical ∠ & 1 alt. int ∠) or AAS (if use both alt. int ∠s)

b.



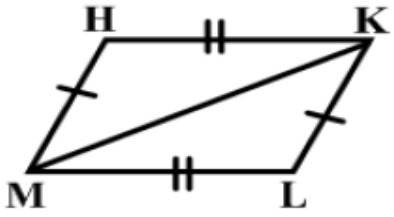
ASA

c.



SAS

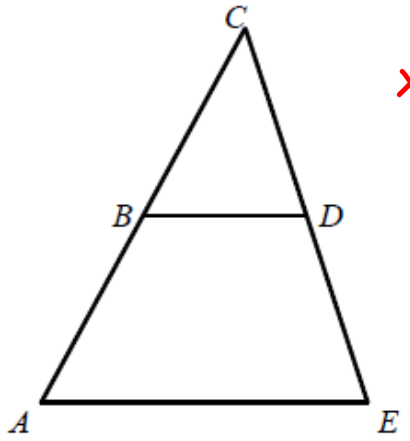
d.



SSS

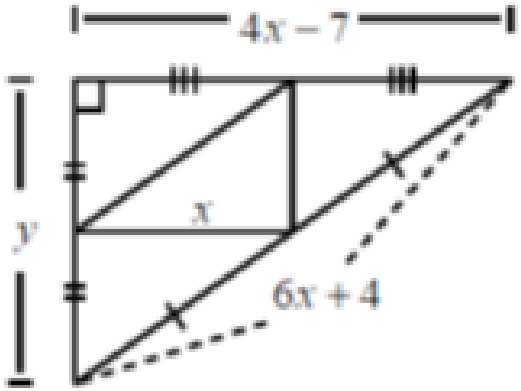
Day 10 Homework Answers

2. Solve for x given $BD = \frac{7}{2}x + 2$ and $AE = 3x + 6$. Assume B is the midpoint of $\overline{AC}$ and D is the midpoint of $\overline{CE}$.



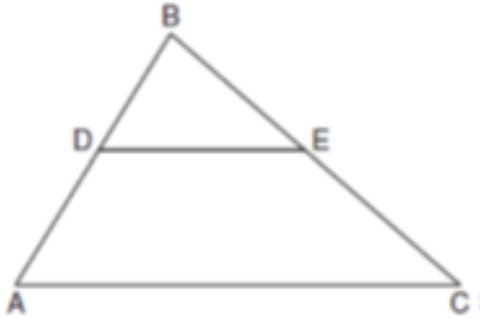
x = 1/2

10. Find the values of x and y.



x = 3.5
y = 24

12. In the diagram below of ABC, DE is a midsegment of triangle ABC, $DE = 7$, $AB = 10$, and $BC = 13$. Find the perimeter of ABC.

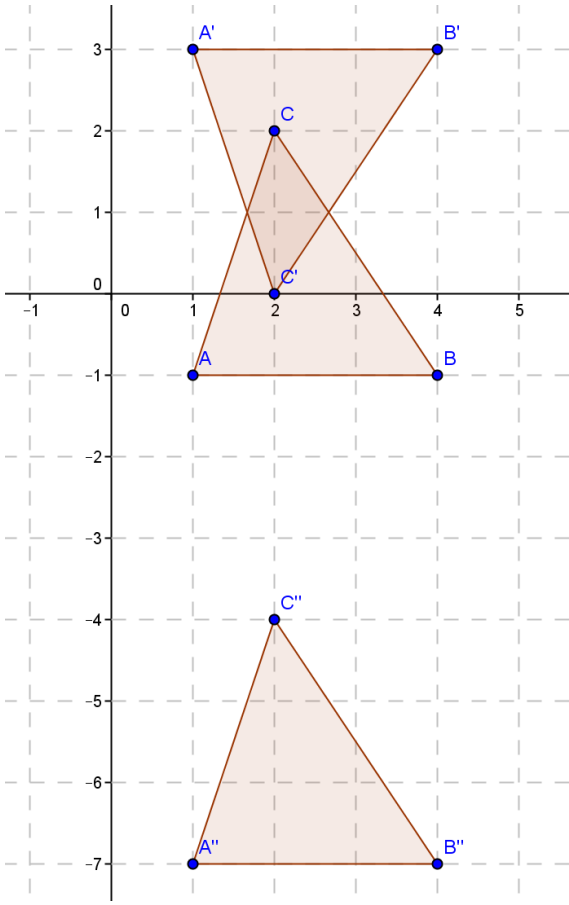


Area = 37

Day 10 Homework

1. x = 9, y = 75°, z = 70°
3. Translate down 6 units

   (x, y) → (x, y – 6)
5. ΔADE ~ ΔACB
7. x = 40
9. 75 units
11. x = 3, y = 17.5
13. x = 9, y = 7.5
15. 180° Rotation about the origin
17. Translation to the left
19. Perimeter = 46 units

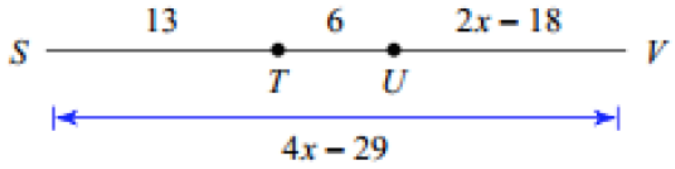


Segment Addition Postulate Practice

up next, if Time allows
(finish tonight for HW)!!

Practice: Segment Addition Postulate Continued…

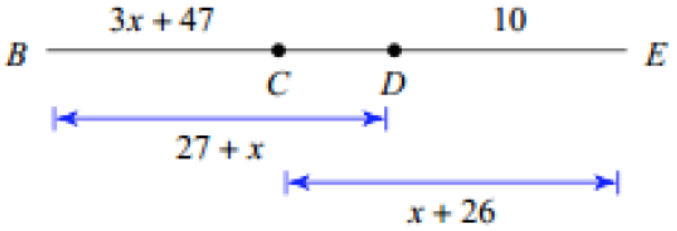
Solve for the requested values.

3. 

Solve for x.

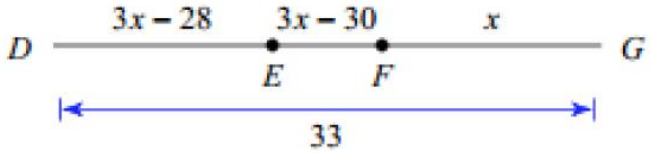
X=15

4. Find *CE*



CE=14

5. Find *DE*



DE=11

6. Points A, B, C, D, and E are collinear and in that order. Find *AC* if $AE = x + 50$ and $CE = x + 32$.

AC=18

Tonight's Homework

Packet p. 31-32 Odd

Packet p. 33-34 Even

Finish Notes p. 41

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