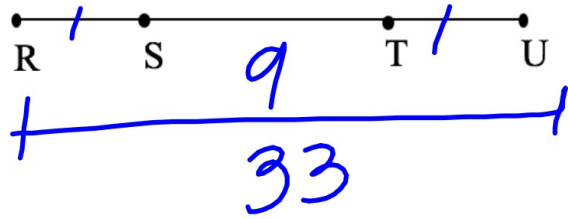


Given: $RS = TU$, $ST = 9$, $RU = 33$



1. Find RS

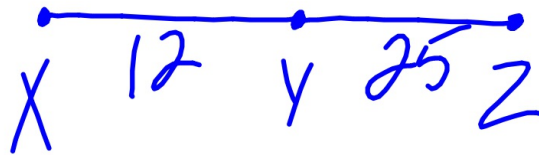
$$2x + 9 = 33$$

$$x = 12$$

2. Find SU.

$$21$$

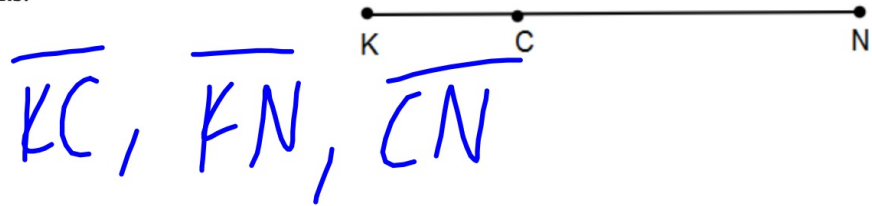
3. Y is between X and Z. Find the distance between points X and Z if the distance between X and Y is 12 units and the distance between Y and Z is 25 units. (Hint—draw a picture.)



$$37 \text{ units}$$

Use the diagram at the right to answer questions 4 – 9.

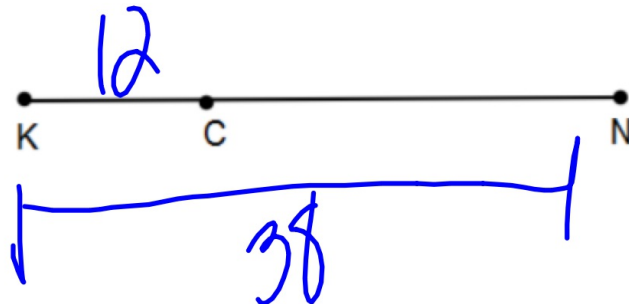
4. Name all labeled segments.



5. What equation can you write about the segments?

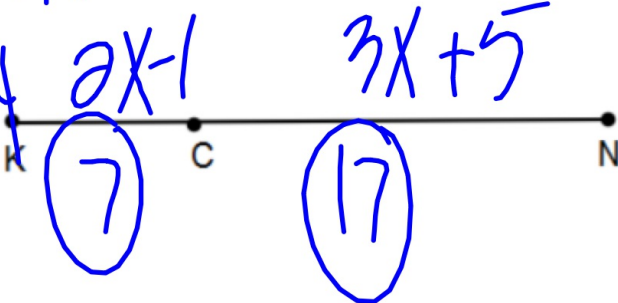
$$\overline{KC} + \overline{CN} = \overline{KN}$$

6. If $KC = 12$ and $KN = 38$, then $CN =$ 26



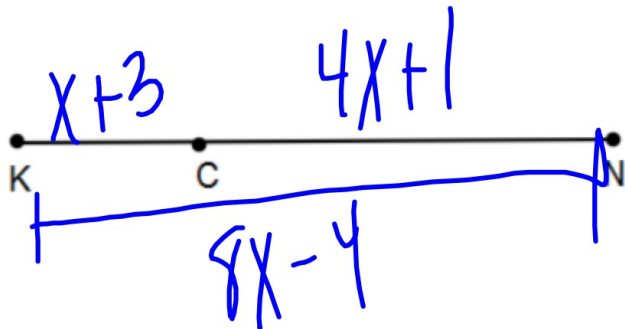
7. If $CN = 19$ and $KC = 11$, then $KN = \underline{30}$

8. $KC = 2x - 1$, $CN = 3x + 5$, and $KN = 24$. Find x , KC and CN .


$$2x - 1 + 3x + 5 = 24$$
$$5x + 4 = 24$$
$$x = 4$$


9. $KC = x + 3$, $CN = 4x + 1$, and $KN = 8x - 4$. Find x , KC , CN , and KN .

$$CN = 11.\bar{6}$$
$$KC = 5.\bar{6}$$
$$KN = 17.\bar{3}$$
$$x + 3 + 4x + 1 = 8x - 4$$
$$x = \frac{8}{3}$$



10. $EM = FM$ and you are told that $EM = 5x - 7$ and that $FM = 9x - 35$. What are the lengths of EM , FM , and EF ?

$$5x - 7 = 9x - 35$$

$$x = 7$$
$$EM = 28$$
$$FM = 28$$
$$EF = 56$$

Answers for HW #4

1. 9, 9; yes

2. 9, 6; no

3. 11, 13; no

4. 7, 6; no

5. $XY = ZW = 4$; yes

6. $ZX = WY = 8$; yes

7. $YZ = 4$; $XW = 12$; no

8. 24

9. 25

10a. 13

11. a. 7

10b. $RS = 40$; $ST = 24$

b. $RS = 60$, $ST = 36$, $RT = 36$

12. a. 9

13. 33

14. 34

b. 9, 18

15. 130

16. Q

17. 6

Find the length of each segment. Tell whether the segments are congruent.

1. \overline{AC} and \overline{BD}

2. \overline{BD} and \overline{CE}

3. \overline{AD} and \overline{BE}

4. \overline{BC} and \overline{CE}



On a number line, the coordinates of X, Y, Z, and W are -7, -3, 1, and 5, respectively. Find the lengths of the two segments and tell whether they are congruent.

5. \overline{XY} and \overline{ZW}

6. \overline{ZX} and \overline{WY}

7. \overline{YZ} and \overline{XW}

$$AC = |-8 - 1| = 9$$

Use the fi

8. If RS

Use the figure at th

16. Find the midpoi

17. What is the coo
midpoint of \overline{QB}

of y

b. Fin

12. **Algeb**

a. Fin

b. Fin

Algebra In Exercises 13–15, use the figure at

13. $PT = 5x + 3$ and $TQ = 7x - 9$

14. $PT = 4x - 6$ and $TQ = 3x + 4$

15. $PT = 7x - 24$ and $TQ = 6x - 2$

Objective 1: Classifying/Naming Angles

An angle is formed by two rays with the same endpoint. The rays are the sides of the angle. The endpoint is the vertex of the angle.

Use the angle below right to answer the questions.



1) Name the sides of the angle.

\overrightarrow{BT} \overrightarrow{BQ}

2) Name the vertex of the angle.

$\cdot B$

3) Name the angle in as many ways as possible.

$\angle TBQ$ $\angle I$ $\angle B$
 $\angle QB T$

Example 1: Name $\angle 1$ in the photo below in two other ways.



$\angle CEA, \angle AEC$

QC 1:

A) Name $\angle CED$ two other ways.

$\angle 2, \angle DEC$

B) Would it be correct to name any of the angles $\angle E$? Explain.

NO, $\angle E$ IS THE VERTEX
OF 3 DIFF \angle 'S.

1.) Acute Angles $\angle 90$

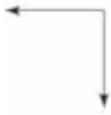
2.) Right Angles $= 90$

3.) Obtuse Angles > 90

4.) Straight Angles $= 180$

Example 2: Classify each angle as *acute*, *right*, *obtuse*, or *straight*.

A)



right

B)



obtuse

C)



acute

D)



straight

Objective 2: I can apply the angle addition postulate.

In geometry, we have a rule, or a postulate, that is similar to the Segment Addition Postulate the Angle Addition Postulate.

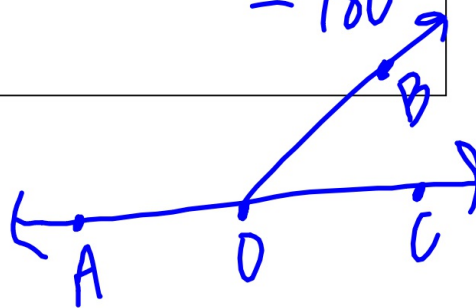
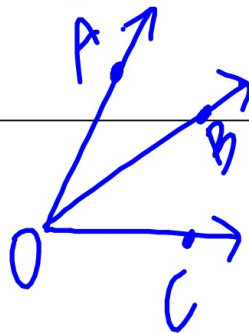
Postulate: Angle Addition Postulate

If point B is in the interior of $\angle AOC$, then

If $\angle AOC$ is a straight angle, then

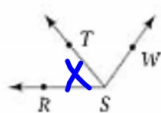
inside
 $m\angle AOB + m\angle BOC = m\angle AOC$

$m\angle AOB + m\angle BOC = 180$



Example 3: Use the angle addition postulate to find each missing angle.

A) What is $m\angle TSW$ if $m\angle RST = 50^\circ$ and $m\angle RSW = 125^\circ$?



$$m\angle RST + m\angle TSW = m\angle RSW$$

$$= 50 + x = 125$$

$$= 75^\circ$$

B) If $m\angle DEG = 145^\circ$, find $m\angle GEF$

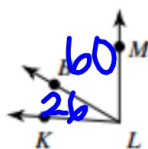


$$= 36^\circ$$

straight
180

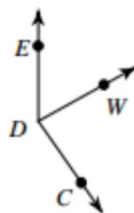
C)

Find $m\angle KLM$ if $m\angle KLB = 26^\circ$ and $m\angle BLM = 60^\circ$.



$$86^\circ$$

D) Find $m\angle WDC$ if $m\angle EDC = 145^\circ$ and $m\angle EDW = 61^\circ$.

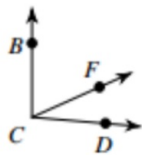


$$84^\circ$$

Example 4: Sometimes the angle measures have variable expressions rather than numbers.

A)

$m\angle FCD = x + 41$, $m\angle BCF = x + 78$,
and $m\angle BCD = 95^\circ$. Find x .



$$\angle BCF = 66^\circ$$

$$\angle FCD = 29^\circ$$

$$x + 41 + x + 78 = 95$$

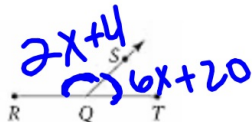
$$2x + 119 = 95$$

$$2x = -24$$

$$x = -12$$

Example 4 (continued):

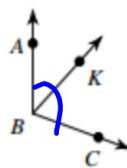
B) Solve for x if $m\angle RQS = 2x + 4$
and $m\angle TQS = 6x + 20$.



$$2x + 4 + 6x + 20 = 180$$

$$x = 19.5$$

C) $m\angle ABC = 17x + 8$, $m\angle ABK = 42^\circ$,
and $m\angle KBC = 12x - 4$. Find $m\angle ABC$.



$$42 + 12x - 4 = 17x + 8$$

$$x = 6$$