

Name key  
Pre-Algebra

Date \_\_\_\_\_  
Period \_\_\_\_\_

Review Sheet

Use the following diagram to answer questions 1-4. In the diagram below  $\overline{JK} \parallel \overline{LM}$ , and line  $n$  is a transversal.



1. Name both pairs of alternate interior angles. (Rotation  $180^\circ$ )

$\angle 3 \cong \angle 6$  and  $\angle 2 \cong \angle 7$

2. Name two pairs of corresponding angles. (Translation)

$\angle 5 \cong \angle 7$  and  $\angle 2 \cong \angle 4$

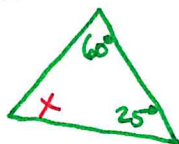
3. Name two pairs of vertical angles. (Reflection)

$\angle 4 \cong \angle 7$  and  $\angle 1 \cong \angle 6$

4. Name two pairs of supplementary angles.

$\angle 1 + \angle 2$  and  $\angle 5 + \angle 8$

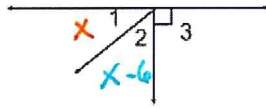
5. A triangle has angles measuring  $25^\circ$  and  $60^\circ$ . What is the measure of the triangle's third angle?



$$\begin{aligned} x + 60 + 25 &= 180 \\ x + 85 &= 180 \\ -85 & \quad -85 \\ \hline x &= 95^\circ \end{aligned}$$

The measure of the triangle's third angle is  $95^\circ$ .

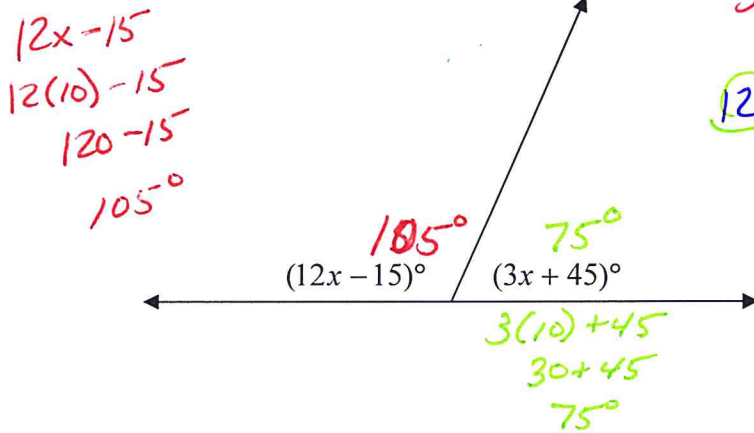
6. In the figure below,  $m\angle 1 = x$  and  $m\angle 2 = x - 6$ . Which statement could be used to prove that  $x = 48$ .



$$\begin{aligned} x + x - 6 &= 90 \\ \underline{2x - 6} &= 90 \\ +6 &+6 \\ \hline 2x &= 96 \\ \frac{2x}{2} &= \frac{96}{2} \\ x &= 48 \end{aligned}$$

- A)  $m\angle 1 = m\angle 2$       B)  $m\angle 2 = 48$       C)  $m\angle 1 + m\angle 2 = 90$       D)  $m\angle 1 + m\angle 2 = 180$

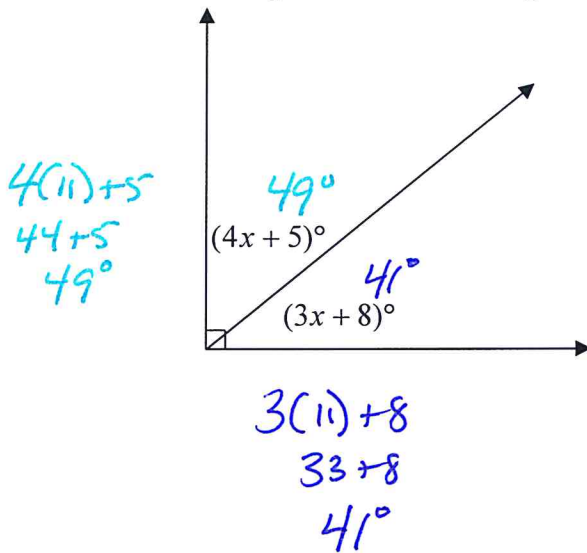
7. Find each angle measure. What geometry fact did you use to solve this?



Supplementary Angles

$$\begin{aligned} 12x - 15 + 3x + 45 &= 180 \\ 15x + 30 &= 180 \\ -30 &-30 \\ \hline 15x &= 150 \\ \frac{15x}{15} &= \frac{150}{15} \\ x &= 10 \end{aligned}$$

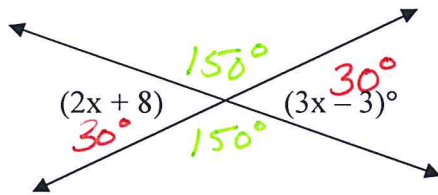
8. Find each angle measure. What geometry fact did you use to solve this?



Complementary Angles

$$\begin{aligned} 4x + 5 + 3x + 8 &= 90 \\ 7x + 13 &= 90 \\ -13 &-13 \\ \hline 7x &= 77 \\ \frac{7x}{7} &= \frac{77}{7} \\ x &= 11 \end{aligned}$$

9. Find the value of x and each angle measure.



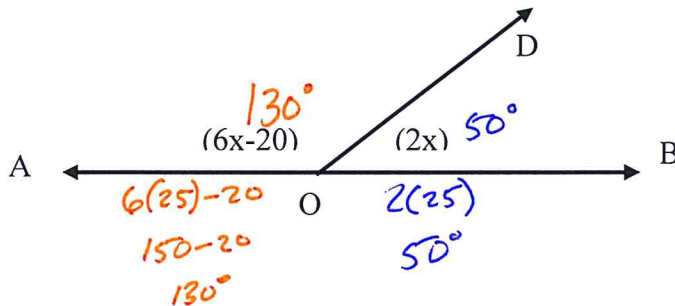
$$\begin{array}{r} 2x + 8 = 3x - 3 \\ -2x \quad -2x \\ \hline -8 = x - 3 \\ +3 \quad +3 \\ \hline 11 = x \end{array}$$

$$\begin{array}{l} 2(11) + 8 \\ 22 + 8 \\ 30^\circ \end{array}$$

$$\begin{array}{l} 3(11) - 3 \\ 33 - 3 \\ 30^\circ \end{array}$$

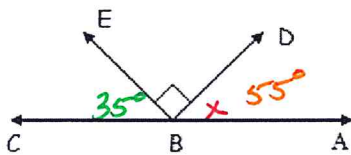
$$180 - 30 = 150$$

10. In the accompanying diagram AOB is a straight line,  $m \angle AOD = 6x - 20$  and  $m \angle BOD = 2x$ . What is the value of x?



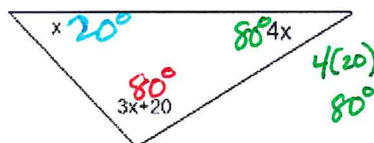
$$\begin{array}{r} (6x - 20) + (2x) = 180 \\ 8x - 20 = 180 \\ +20 \quad +20 \\ \hline 8x = 200 \\ \frac{8x}{8} = \frac{200}{8} \\ x = 25 \end{array}$$

11. In the accompanying diagram, ABC is a straight line and  $m \angle CBE = 35$ . Find  $m \angle ABD$ .



$$\begin{array}{r} 35 + 90 + x = 180 \\ 125 + x = 180 \\ -125 \quad -125 \\ \hline x = 55^\circ \end{array}$$

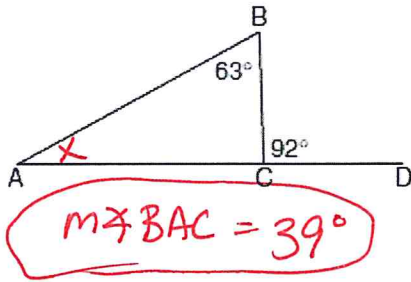
12. Find each angle measure.



$$\begin{array}{l} 3(20) + 20 \\ 60 + 20 \\ 80^\circ \end{array}$$

$$\begin{array}{r} x + 4x + 3x + 20 = 180 \\ 8x + 20 = 180 \\ -20 \quad -20 \\ \hline 8x = 160 \\ \frac{8x}{8} = \frac{160}{8} \\ x = 20 \end{array}$$

13. Triangle  $ABC$ , with side  $\overline{AC}$  extended to  $D$ , is shown in the accompanying diagram. If  $m\angle ABC = 63$  and  $m\angle BCD = 92$ , what is  $m\angle BAC$ ?

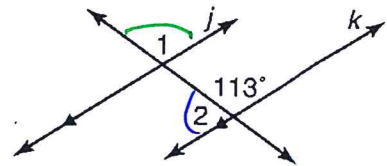


$$\begin{array}{r} x + 63 = 92 \\ -63 \quad -63 \\ \hline x = 39 \end{array}$$

For questions 14 and 15 look at the diagram to the right.

14. Find  $m\angle 1$ .

- A.  $67^\circ$       B.  $87^\circ$       C.  $113^\circ$       D.  $24^\circ$



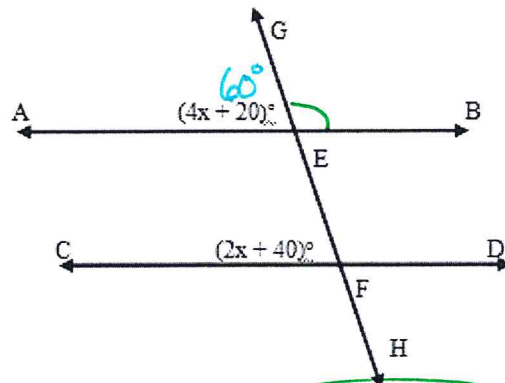
15. Find  $m\angle 2$ .

- A.  $67^\circ$       B.  $87^\circ$       C.  $113^\circ$       D.  $24^\circ$

$$180 - 113$$

16. In the accompanying diagram  $AB \parallel CD$ . If the  $m\angle AEG = 4x + 20$  and the  $m\angle CFE = 2x + 40$ , find the value of  $\angle GEB$ .

$$\begin{array}{r} 4x + 20 = 2x + 40 \\ -2x \quad -2x \\ \hline 2x + 20 = 40 \\ -20 \quad -20 \\ \hline 2x = 20 \\ \frac{2x}{2} = \frac{20}{2} \\ x = 10 \end{array}$$



$$\begin{array}{l} 4x + 20 \\ 4(10) + 20 \\ 40 + 20 \\ 60 \end{array}$$

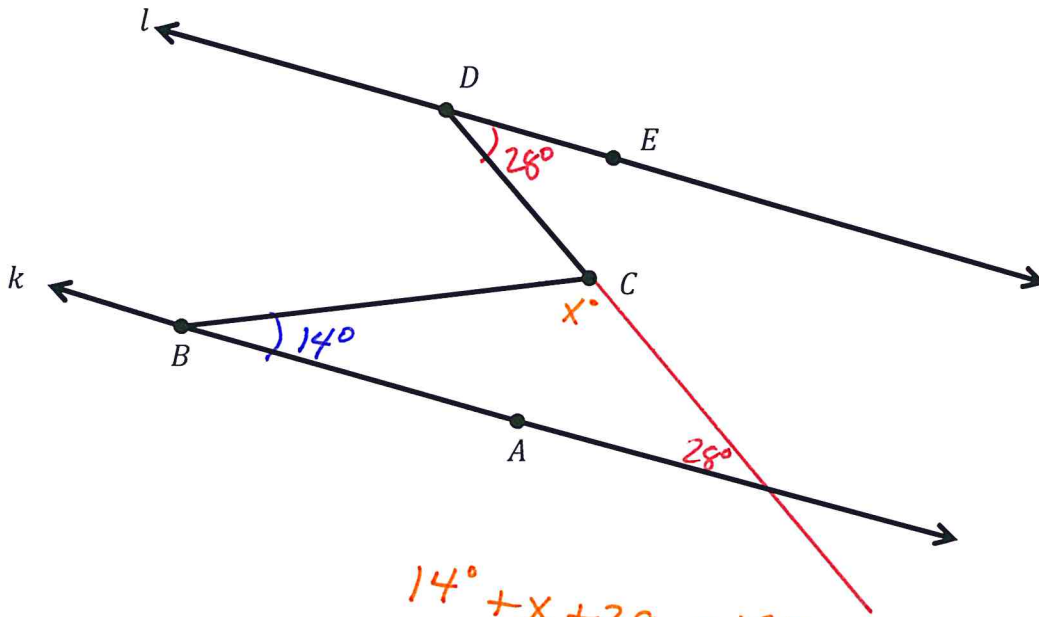
$$\begin{array}{l} 180 - 60 \\ 120^\circ \end{array}$$

$$m\angle GEB = 120^\circ$$

20. Use the diagram to answer the question below.

Find  $m\angle BCD$

$k \parallel l$



$$14^\circ + x + 28 = 180$$

$$\begin{array}{r} x + 42 = 180 \\ -42 \quad -42 \\ \hline \end{array}$$

$$x = 138$$

$$m\angle BCD = 180 - 138$$

$$\boxed{m\angle BCD = 42^\circ}$$