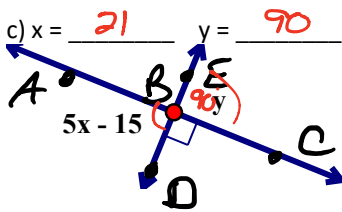
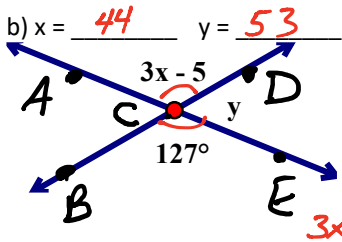
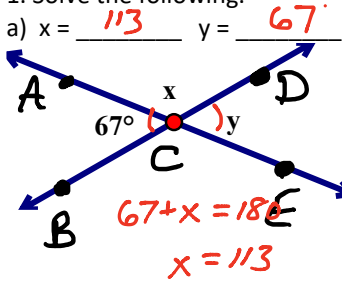


Tools For Geometry – Angle Pairs

Hw Section 1.5

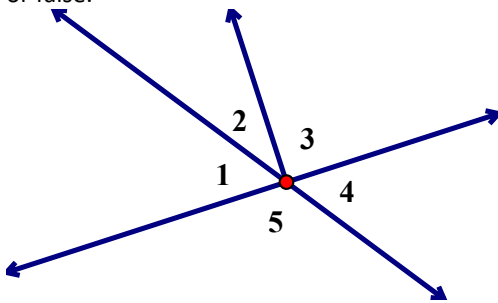
Name _____

1. Solve the following.



$y + 90 = 180$
 $y = 90$
 $90 = 5x - 15$
 $105 = 5x$
 $21 = x$

Use the figure below to determine if each statement is true or false.



2. $\angle 5$ and $\angle 3$ are vertical angles. T or F
3. $\angle 1$ and $\angle 5$ are a linear pair. T or F
4. $\angle 4$ and $\angle 3$ are adjacent angles. T or F
5. $\angle 4$ and $\angle 1$ are vertical angles. T or F
6. $\angle 3$ and $\angle 4$ are a linear pair. T or F

7. If $\angle 1$ and $\angle 2$ are supplements and $m\angle 1 = 150^\circ$, what is $m\angle 2$? 30

$m\angle A + m\angle B = 180$
 $150 + m\angle B = 180$
 $m\angle B = 30$

8. If $\angle 1$ and $\angle 2$ are complements and $m\angle 1 = 27^\circ$, what is $m\angle 2$? 63

$m\angle A + m\angle B = 90$
 $27 + m\angle B = 90$
 $m\angle B = 63$

9. If $\angle 1$ and $\angle 2$ are vertical angles and $m\angle 1 = 36^\circ$, what is $m\angle 2$? 36

$\angle A \cong \angle B$

10. If $\angle 1$ and $\angle 2$ are a linear pair and $m\angle 1 = 2x + 8$ and $m\angle 2 = 3x + 2$, what is the value of x ? $x = 34$

$m\angle A + m\angle B = 180$
 $2x + 8 + 3x + 2 = 180$
 $5x + 10 = 180$
 $5x = 170$
 $x = 34$

11. If $\angle 1$ and $\angle 2$ are vertical angles and $m\angle 1 = 7x - 5$ and $m\angle 2 = 4x + 10$, what is the value of x ? $x = 5$

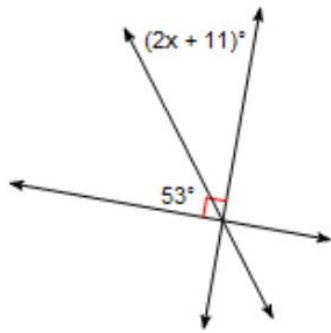
$\angle A \cong \angle B$
 $m\angle A = m\angle B$
 $7x - 5 = 4x + 10$
 $3x - 5 = 10$
 $3x = 15$
 $x = 5$

Tools For Geometry – Angle Pairs

Hw Section 1.5

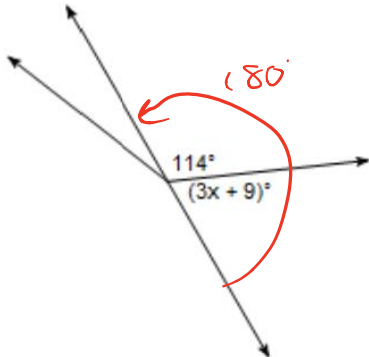
Name _____

12. Find the value of x .



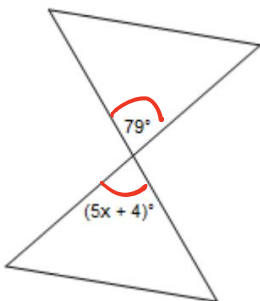
$$\begin{aligned} 2x + 11 + 53 &= 90^\circ \\ 2x + 64 &= 90 \\ 2x &= 26 \\ x &= 13 \end{aligned}$$

13. Find the value of x .



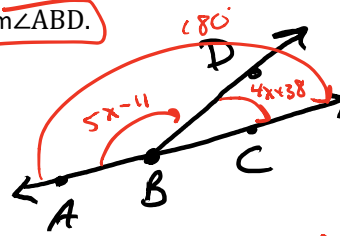
$$\begin{aligned} 3x + 9 + 114 &= 180^\circ \\ 3x + 123 &= 180^\circ \\ 3x &= 57 \\ x &= 19 \end{aligned}$$

14. Find the value of x .



$$\begin{aligned} 5x + 4 &= 79 \\ 5x &= 75 \\ x &= 15 \end{aligned}$$

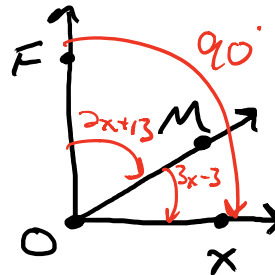
15. The $m\angle ABD = 5x - 11$, $m\angle CBD = 4x + 38$. Find $m\angle ABD$.



$$\begin{aligned} m\angle ABD + m\angle CBD &= 180^\circ \\ (5x - 11) + (4x + 38) &= 180 \\ \frac{9x + 27}{9} &= \frac{180}{9} \\ x + 3 &= 20 \\ x &= 17 \end{aligned}$$

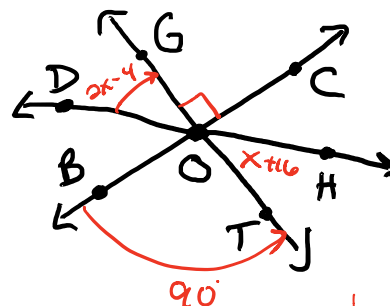
$$\begin{aligned} m\angle ABD &= 5x - 11 \\ &= 5(17) - 11 \\ &= 85 - 11 \\ m\angle ABD &= 74^\circ \end{aligned}$$

16. $m\angle FOM = 2x + 13$, $m\angle MOX = 3x - 3$ and $\angle FOX$ is a right angle. Find the value of x .



$$\begin{aligned} m\angle FOM + m\angle MOX &= 90^\circ \\ (2x + 13) + (3x - 3) &= 90^\circ \\ 5x + 10 &= 90 \\ 5x &= 80 \\ x &= 16 \end{aligned}$$

17. $\angle BOT$ is a right angle, $m\angle DOG = 2x - 4$, $m\angle HOT = x + 16$. Find $m\angle DOC$.



$$\begin{aligned} m\angle DOG &= m\angle HOT \\ 2x - 4 &= x + 16 \\ x - 4 &= 16 \\ x &= 20 \end{aligned}$$

$$\begin{aligned} m\angle DOC &= m\angle DOG + m\angle GOC \\ &= (2x - 4) + 90 \\ &= 2x + 86 \\ &= 2(20) + 86 \\ &= 40 + 86 \\ m\angle DOC &= 126 \end{aligned}$$