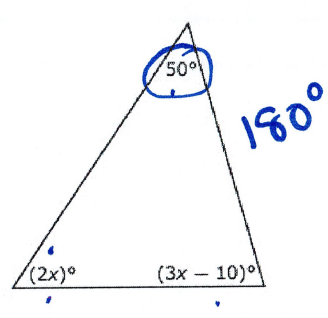
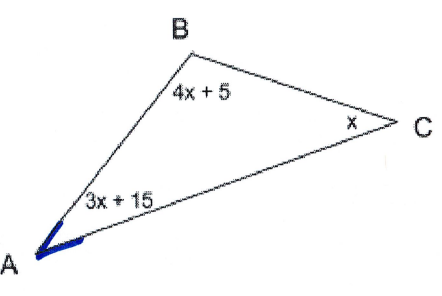
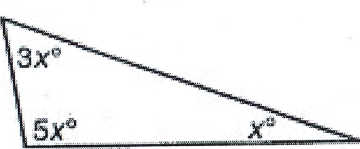
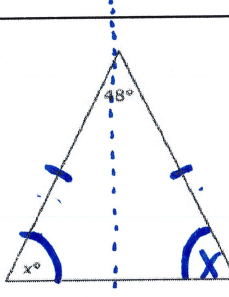
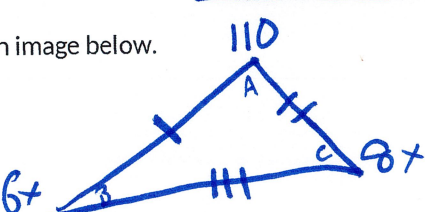


Name: \_\_\_\_\_

### 7GL Angle Applications of Equations (Triangle Relationships)

Directions: Write an equation and solve for  $x$  in each of the triangles below.

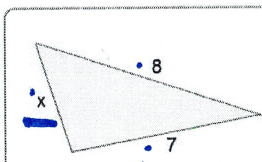
	<p>Equation <math>50 + 2x + 3x - 10 = 180</math></p> $\begin{array}{r} 40 + 5x = 180 \\ -40 \quad -40 \\ \hline 5x = 140 \\ \frac{5x}{5} = \frac{140}{5} \\ x = 28 \end{array}$
	<p>Equation <math>3x + 15 + 4x + 5 + x = 180</math></p> $\begin{array}{r} 8x + 20 = 180 \\ -20 \quad -20 \\ \hline 8x = 160 \\ \frac{8x}{8} = \frac{160}{8} \\ x = 20 \end{array}$ <p>What is the measure of angle A? <math>75</math></p>
	<p>Equation <math>3x + 5x + x = 180</math></p> $\begin{array}{r} 9x = 180 \\ \frac{9x}{9} = \frac{180}{9} \\ x = 20 \end{array}$
	<p>Equation <math>48 + x + x = 180</math></p> $\begin{array}{r} 48 + 2x = 180 \\ -48 \quad -48 \\ \hline 2x = 132 \\ \frac{2x}{2} = \frac{132}{2} \\ x = 66 \end{array}$
<p>Triangle ABC is a scalene triangle. Angle A measures <math>110^\circ</math>. Angle B measures <math>6x^\circ</math> and angle C measures <math>8x^\circ</math>.</p> <p>*Draw an image below.</p> 	<p>Equation <math>110 + 6x + 8x = 180</math></p> $\begin{array}{r} 110 + 14x = 180 \\ -110 \quad -110 \\ \hline 14x = 70 \\ \frac{14x}{14} = \frac{70}{14} \\ x = 5 \end{array}$ <p>What is the measure of angle C? <math>40^\circ</math></p>

$$5 + m > \frac{L}{x}$$

$$3 < 6$$

$$6 > 3$$

$$5 + m > L$$



$$7 + 8 > x$$

$$15 > x$$

$$x + 7 > 8$$

$$x > 1$$

$$1 < x < 15$$

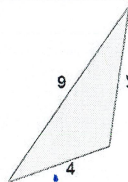
The diagram is not drawn to scale.  
Which of the following inequalities for  $x$  is correct?

A  $-1 < x < 15$

B  $0 < x < 15$

C  $1 < x < 15$

~~D~~



$$4 + 9 > y$$

$$13 > y$$

$$y + 4 > 9$$

$$y > 5$$

$$5 < y < 13$$

The diagram is not drawn to scale.  
Which of the following inequalities for  $y$  is correct?

A  $y > 13$

B  $-5 < y < 13$

C  $0 < y < 13$

D  $5 < y < 13$

Find the range of lengths for the third side of the triangle using the lengths of the other two sides (show your work on the righthand side):

7ft 13ft	$7 + 13 > x$ $20 > x$ $x + 7 > 13$ $-7 \quad -7$ $x > 6$ $6 < x < 20$
4mm 7mm	$4 + 7 > x$ $11 > x$ $x + 4 > 7$ $-4 \quad -4$ $x > 3$ $3 < x < 11$
12ft 9ft	$3 < x < 21$ <p style="text-align: right;">20</p> <p style="text-align: right;">→</p>
10m 4m	$6 < x < 14$
8in 21in	$13 < x < 29$
2.5cm 3.2cm	$0.7 < x < 5.7$