

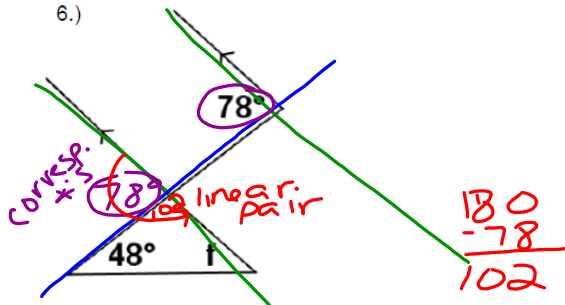
Geometry CC - Unit 1

Lesson 4: Unknown Angles - Angles in a Triangle

M1 L8

Homework:

6.)



$m\angle f = 30^\circ$

If parallel lines are cut by a transversal, then corresponding angles are equal in measure;

Linear pairs form supplementary angles;

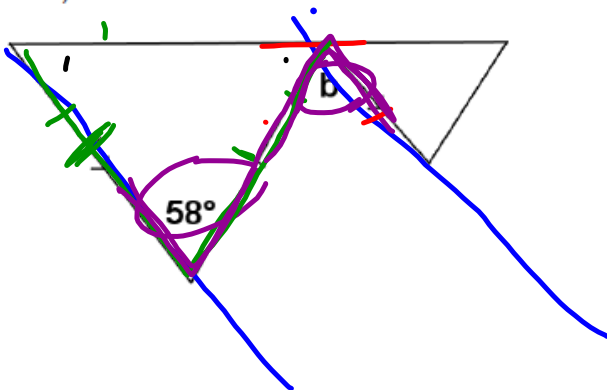
The sum of the angle measures in a triangle is 180°

goal: $48 + f + \boxed{102} = 180$

$f + 150 = 180$

$\boxed{f = 30}$

7.)

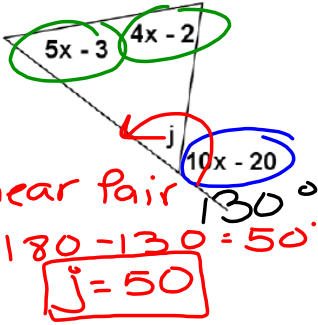


$m\angle b = 58^\circ$

If parallel lines are cut by a transversal, then alternate interior angles are equal in measure

$b = 58^\circ$
 Alt. int. angles

8.)



$$m\angle j = 50^\circ$$

If parallel lines are cut by a transversal, the alternate interior angles are equal in measure;

Linear pairs form supplementary angles

linear pair

$$180 - 130 = 50$$

$$j = 50$$

ext \angle = sum of the opp int \angle 's

$$10x - 20 = 5x - 3 + 4x - 2$$

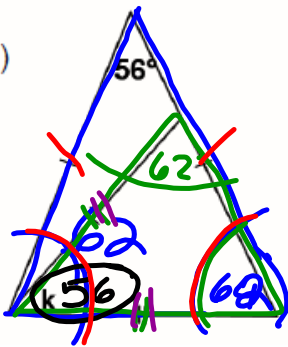
$$10x - 20 = 9x - 5$$

$$-9x + 20 \quad -9x + 20$$

$$x = 15$$

Complete each of the following problems by solving for the unknown labeled angles.

9.)



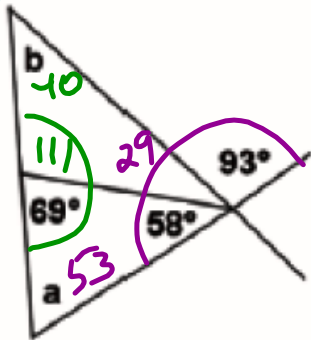
$$180 - 56 = 124$$

$$124 \div 2 = 62$$

$$k = 56$$

$$\begin{array}{r}
 62 \ 180 \\
 + 62 \ 124 \\
 \hline
 124 \ 56 \\
 \dots
 \end{array}$$

10.)



$$m\angle a = 53^\circ$$

$$m\angle b = 40^\circ$$

$$\begin{array}{r} 1 \\ 93 \\ + 58 \\ \hline 151 \end{array} \quad \begin{array}{r} 180 \\ - 151 \\ \hline 29 \end{array}$$

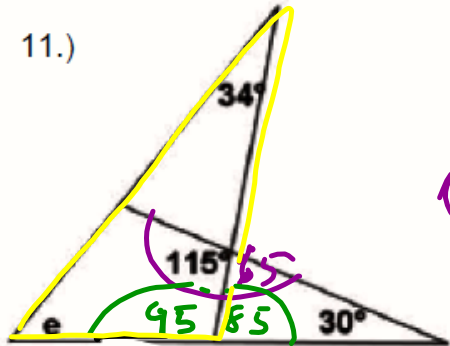
$$\begin{array}{r} 1 \\ 69 \\ + 58 \\ \hline 127 \end{array} \quad \begin{array}{r} 180 \\ - 127 \\ \hline 53 \end{array}$$

$a = 53$

$$\begin{array}{r} 180 \\ - 69 \\ \hline 111 \end{array}$$

$$\begin{array}{r} 111 + 29 + b = 180 \\ 140 + b = 180 \\ - 140 \quad - 140 \\ \hline b = 40 \end{array}$$

11.)



$$\begin{array}{r} 65 \\ + 30 \\ \hline 95 \end{array} \quad \begin{array}{r} 180 \\ - 95 \\ \hline 85 \end{array}$$

$$\textcircled{1} \begin{array}{r} 180 \\ - 115 \\ \hline 65 \end{array}$$

Linear pairs
are supp.

Sum of \angle measures
in a \triangle is 180.

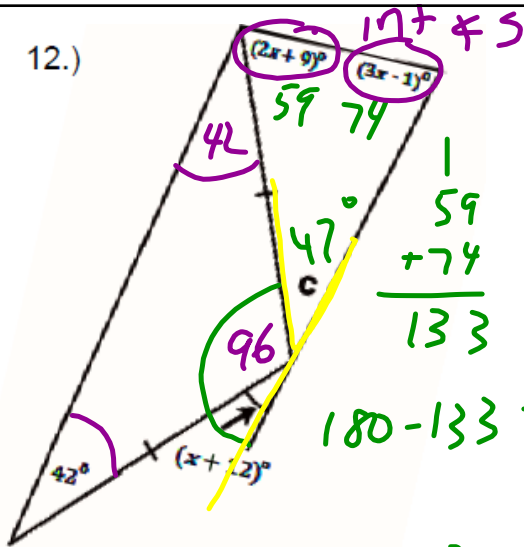
$$\begin{array}{r} 34 + 95 + e = 180 \\ 129 + e = 180 \\ - 129 \quad - 129 \\ \hline e = 51 \end{array}$$

$$m\angle e = 51^\circ$$

Linear pairs form supplementary angles;

The sum of the angle measures in a triangle is 180°

12.)



$$m\angle c = 47^\circ$$

The base angles of an isosceles triangle are equal in measure;

Sum of the angle measures in a triangle is 180° ;

Exterior angle of a triangle equals the sum of the two interior opposite angles;

Sum of the angle measures in a triangle is 180°

$$\begin{array}{r} 59 \\ + 74 \\ \hline 133 \end{array}$$

$$180 - 133 = 47^\circ$$

$$2x + 9 + 3x - 1 = 96 + x + 12$$

$$\begin{array}{r} \therefore 42 \quad 180 \\ + 42 \quad - 84 \\ \hline 84 \quad 96 \end{array}$$

$$\begin{array}{r} 5x + 8 = x + 108 \\ -x \quad \quad -x \\ \hline 4x + 8 = 108 \end{array}$$

$$\begin{array}{r} 4x + 8 = 108 \\ -8 \quad \quad -8 \\ \hline 4x = 100 \end{array}$$

$$\begin{array}{l} \frac{4x = 100}{4} \quad \frac{4}{4} \\ x = 25 \end{array}$$

Find the values of d and x .

If 2 // lines are cut by a transversal, then the corresponding \angle s are \cong

Linear pairs are supp

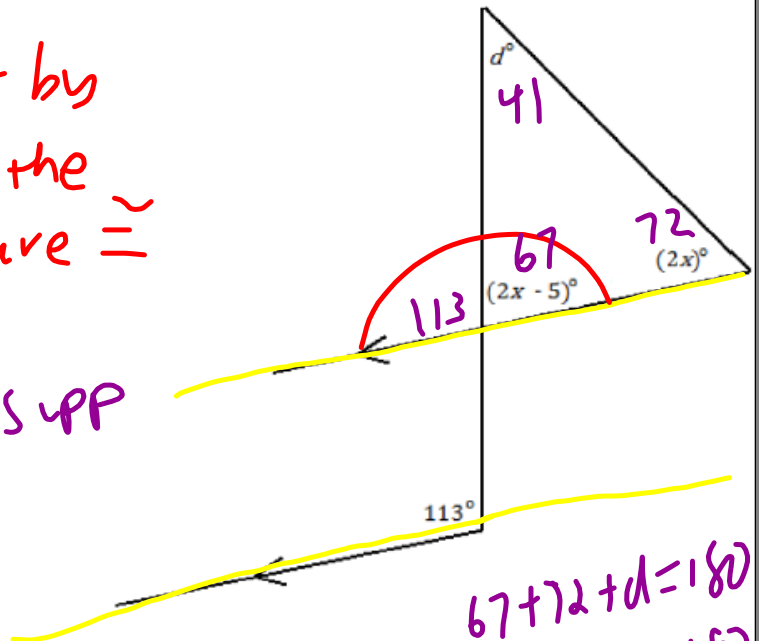
$$113 + 2x - 5 = 180$$

$$2x + 108 = 180$$

$$\begin{array}{r} 2x + 108 = 180 \\ -108 \quad -108 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{72}{2}$$

$$x = 36$$



$$67 + 72 + d = 180$$

$$139 + d = 180$$

$$\begin{array}{r} 139 + d = 180 \\ -139 \quad -139 \\ \hline \end{array}$$

$$d = 41$$