

Vertical and Adjacent Angles

Vertical Angles

Angles formed opposite from each other when two lines intersect. They are **ALWAYS** congruent!

yellow = yellow

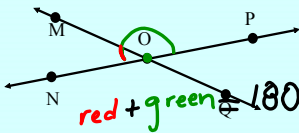


green = green



Adjacent Angles

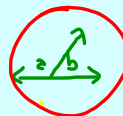
Angles that have a common vertex and common sides.



red + green = 180



Label each of the following as vertical, or adjacent.



A



V



A



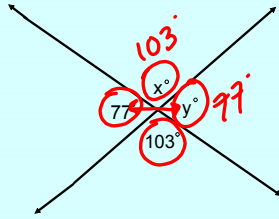
V



Knowing that these angles are vertical, what are the measures of x and y ?

$x =$

$y =$



Angle 1 = 40
Angle 2 = $2x + 10$

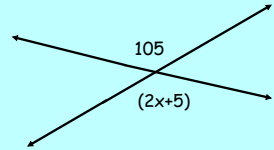
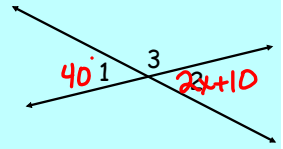
What is the value of x ?

$x = 15$

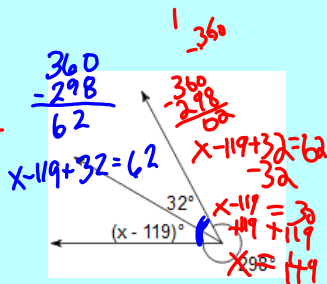
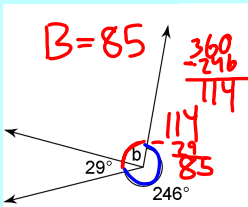
$$\begin{array}{r} 40 = 2x + 10 \\ -10 \quad -10 \\ \hline 30 = 2x \\ \frac{30}{2} = \frac{2x}{2} \end{array}$$

What is the value of x ?

$$\begin{array}{l} 2x + 5 = 105 \\ 2x = 100 \\ x = 50 \end{array}$$

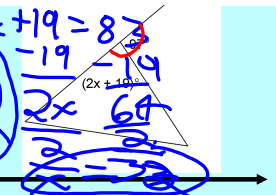


What is the value of x ?



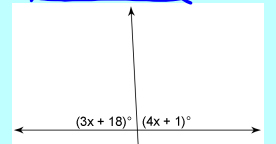
What is the value of x ?

$x = 32$



What is the value of x ?

$$\begin{array}{l} 7x + 19 = 180 \\ 7x = 161 \\ x = 23 \end{array}$$



What is the value of x ?

Handwritten solution:

$$3x + 1 = 61$$

$$3x = 60$$

$$\frac{3x}{3} = \frac{60}{3}$$

$$x = 20$$

7+ Only:

Solve for x :

Handwritten solution:

$$6x + 238 = 3x + 178$$

$$-3x - 238 = -3x - 238$$

$$\frac{3x}{3} = \frac{-60}{3} \quad x = -20$$

Find the measurement of the angle:

Handwritten solution:

$$5x - 2 = 4x + 17$$

$$-4x + 2 = -4x + 2$$

$$x = 19$$