

ANGLE RELATIONSHIPS

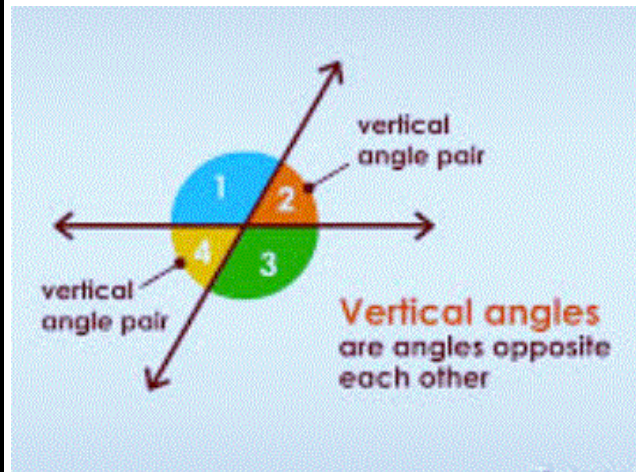
CONGRUENT ANGLES

SUPPLEMENTARY ANGLES

2 Angles that have
the same measure.

angle = angle

Example:



$$\angle 1 \cong \angle 3$$

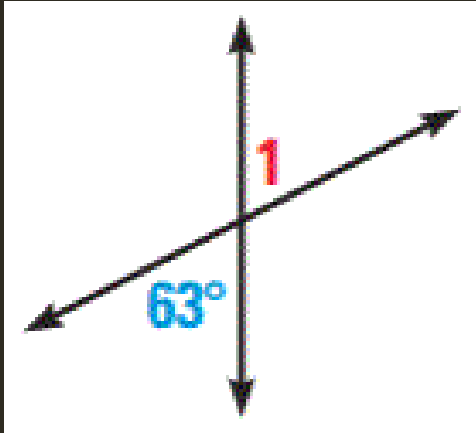
$$\angle 2 \cong \angle 4$$

Vertical Angles are Congruent.

GUIDED PRACTICE

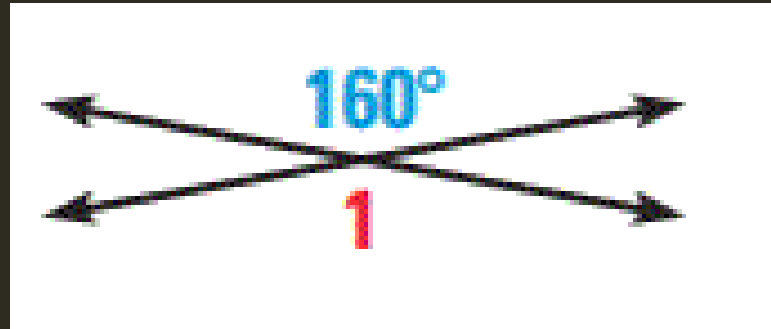
What is the measure of $\angle 1$?

#1



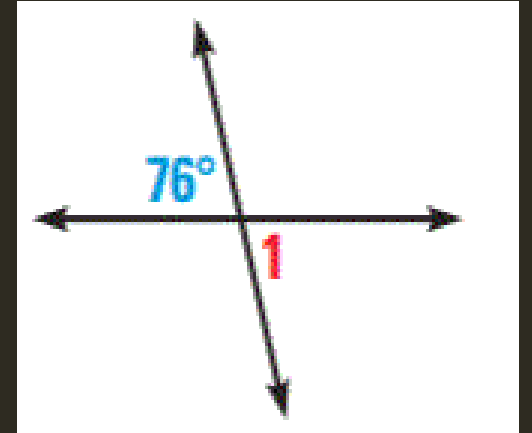
63°

#2



160°

#3



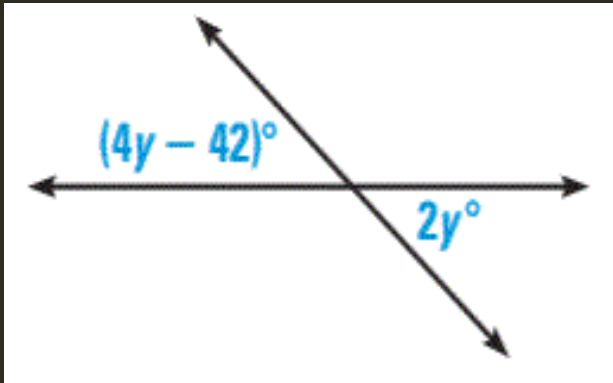
76°

angle = angle

GUIDED PRACTICE

Solve for the variable.

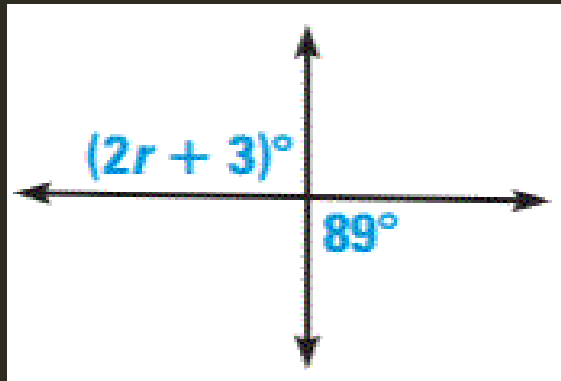
#4



$$4y - 42 = 2y$$

$$y = 21$$

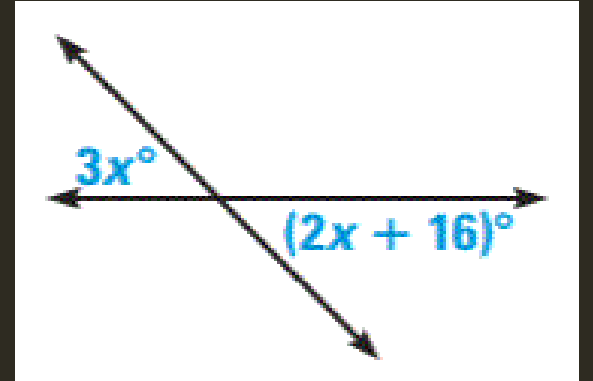
#5



$$2r + 3 = 89$$

$$r = 43$$

#6



$$3x = 2x + 16$$

$$x = 16$$

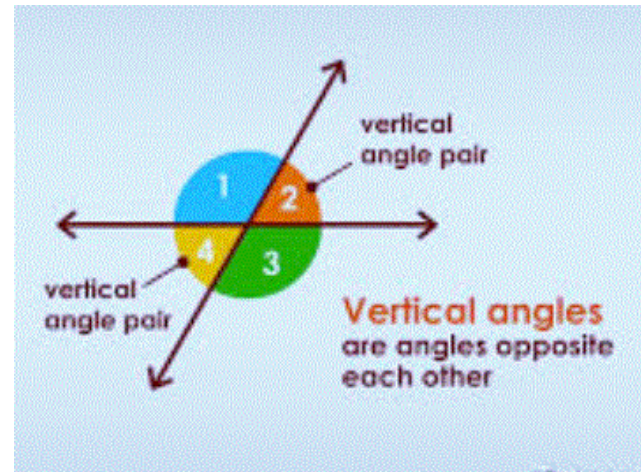
ANGLE RELATIONSHIPS

CONGRUENT ANGLES

2 Angles that have the same measure.

$$\text{angle} = \text{angle}$$

Example:



$$\angle 1 \cong \angle 3$$

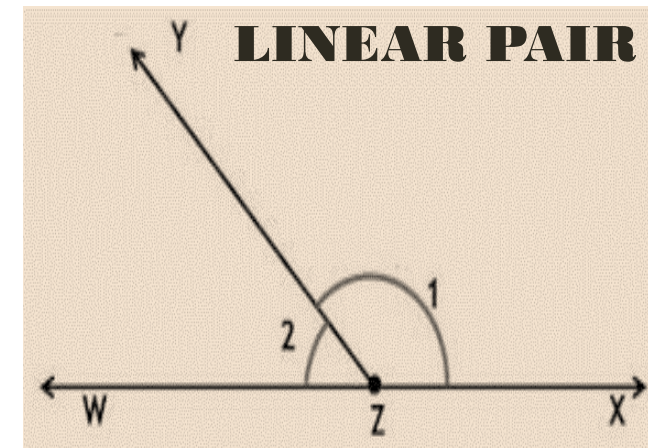
$$\angle 2 \cong \angle 4$$

SUPPLEMENTARY ANGLES

2 Angles that Add Up to = 180° .

$$\text{angle} + \text{angle} = 180$$

Example:



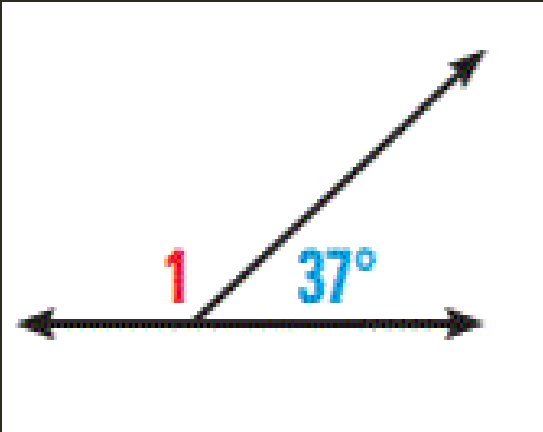
$$\angle 1 + \angle 2 = 180$$

GUIDED
PRACTICE

Linear Pairs are Supplementary. Subtract from 180° .

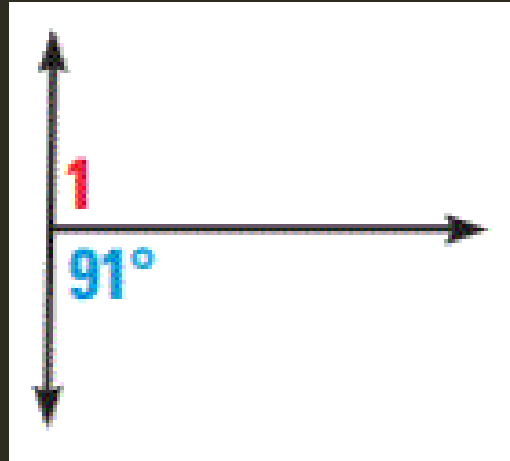
What is the measure of $\angle 1$?

#7



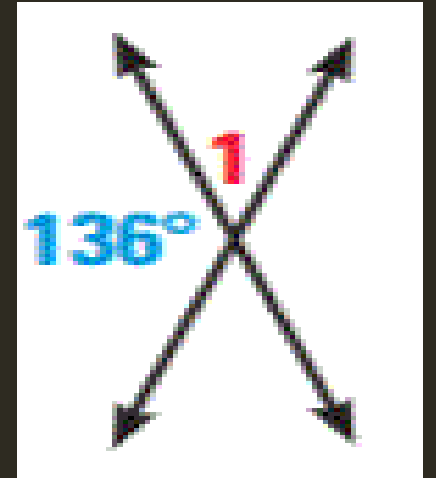
$$\begin{array}{r} 180 \\ - 37 \\ \hline 143^\circ \end{array}$$

#8



$$\begin{array}{r} 180 \\ - 91 \\ \hline 89^\circ \end{array}$$

#9



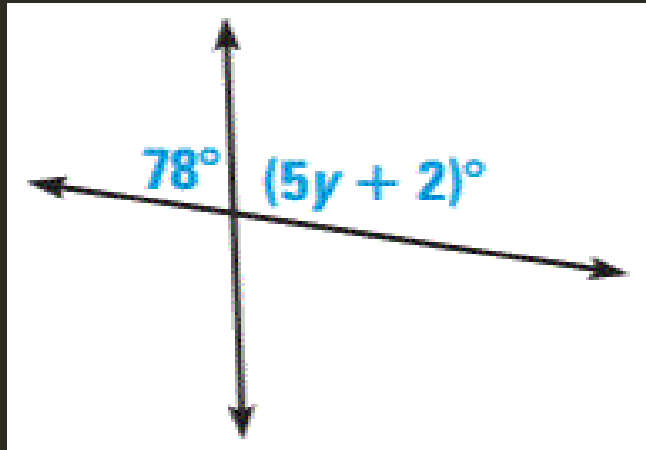
$$\begin{array}{r} 180 \\ - 136 \\ \hline 44^\circ \end{array}$$

GUIDED
PRACTICE

angle + angle = 180

Solve for the variable.

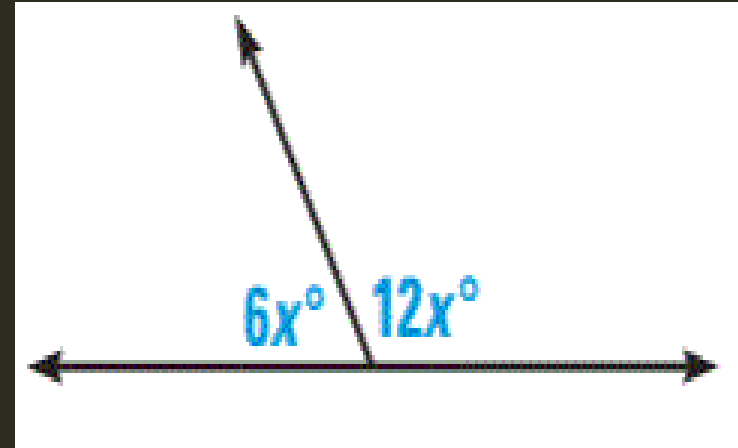
#10



$$5y + 2 + 78 = 180$$

$$y = 20$$

#11



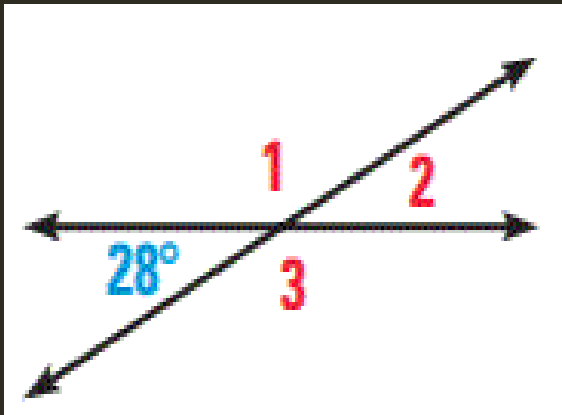
$$6x + 12x = 180$$

$$x = 10$$

PUTTING IT ALL TOGETHER

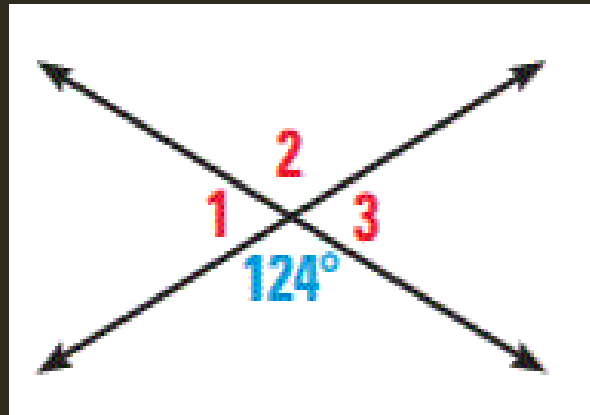
What is the measure of $\angle 1$, $\angle 2$ and $\angle 3$?

#12



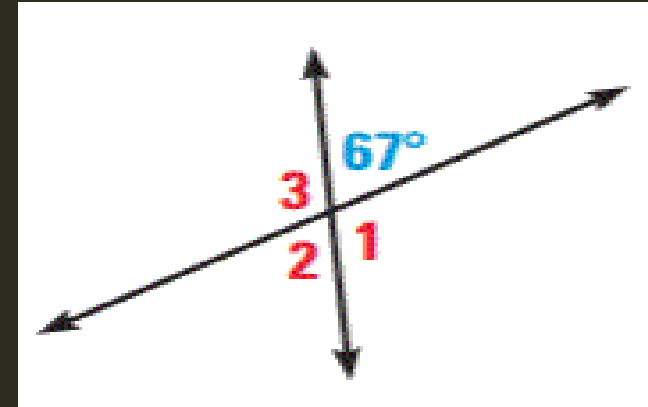
$$\begin{aligned}\angle 1 &= 152^\circ \\ \angle 2 &= 28^\circ \\ \angle 3 &= 152^\circ\end{aligned}$$

#13



$$\begin{aligned}\angle 1 &= 56^\circ \\ \angle 2 &= 124^\circ \\ \angle 3 &= 56^\circ\end{aligned}$$

#14



$$\begin{aligned}\angle 1 &= 113^\circ \\ \angle 2 &= 67^\circ \\ \angle 3 &= 113^\circ\end{aligned}$$