

1. The Math Club sells hot dogs and hamburgers at the football games.

\*50 hot dogs and 75 hamburgers will sell for \$250.

\*100 hot dogs and 75 hamburgers will sell for \$312.50

How much does each hamburger sell for?

$$\begin{array}{r}
 50x + 75y = 250 \\
 - 100x + 75y = 312.50 \\
 \hline
 -50x = -62.50 \\
 \hline
 -50 \qquad -50 \\
 \hline
 x = \$1.25
 \end{array}$$

$$\begin{array}{r}
 1.25(50) + 75y = 250 \\
 62.50 + 75y = 250 \\
 -62.50 \qquad -62.50 \\
 \hline
 75y = 187.50 \\
 \hline
 \frac{75y}{75} = \frac{187.50}{75}
 \end{array}$$

2. Evaluate  $f(-5)$  when  $f(x) = x^2 + 3x - 10$

$$\begin{array}{l}
 (-5)^2 + 3(-5) - 10 \\
 25 - 15 - 10 \\
 f(-5) = \boxed{0} \quad (-5, 0)
 \end{array}$$

$$y = \boxed{\$2.50}$$

The length of a rectangle is <sup>(2)</sup>twice its width. If the width is decreased by 5, the new rectangle has a perimeter of 86. What is the length of the new rectangle?

$$\begin{array}{l}
 \begin{array}{c} 2w \\ \hline w \end{array} \\
 \begin{array}{c} 2w \\ \hline w-5 \end{array} \quad \begin{array}{c} P=86 \\ \hline w-5 \end{array} \\
 \begin{array}{r}
 6w - 10 = 86 \\
 +10 \quad +10 \\
 \hline
 6w = 96 \\
 \frac{6w}{6} = \frac{96}{6} \\
 w = 16
 \end{array}
 \end{array}$$

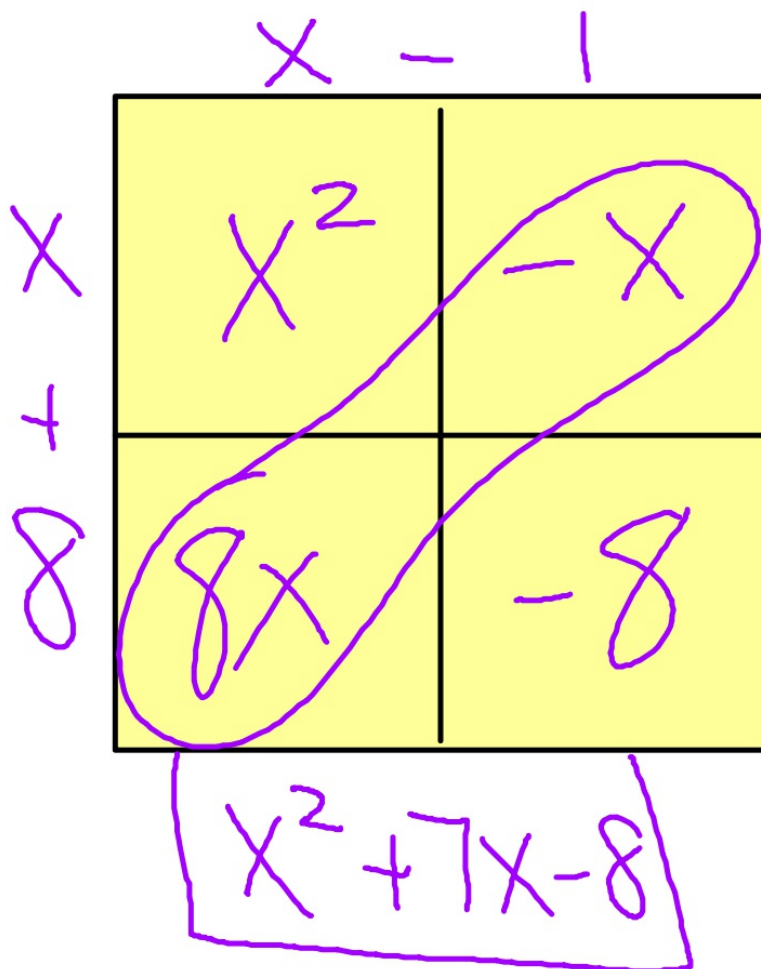
$$\begin{array}{l}
 2w \\
 2(16) \\
 \hline
 \boxed{32}
 \end{array}$$

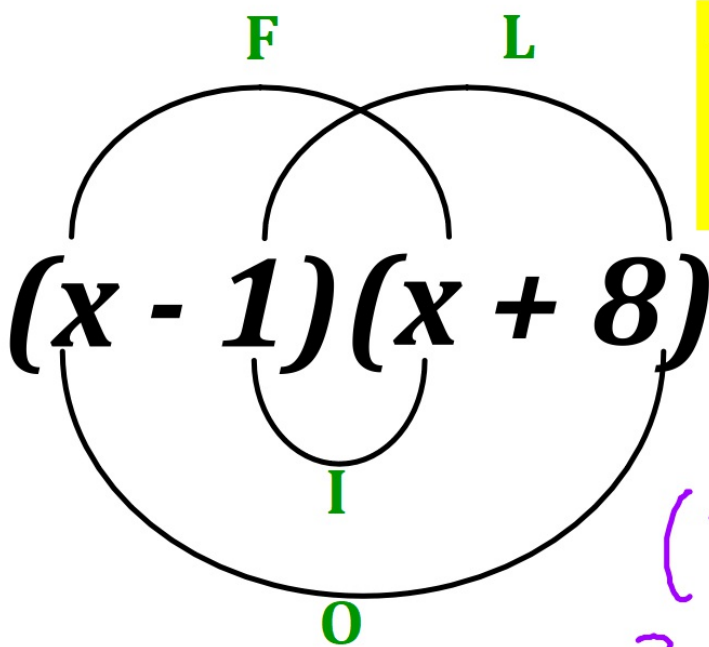
# **Multiplying Binomials**

**Box Method:**

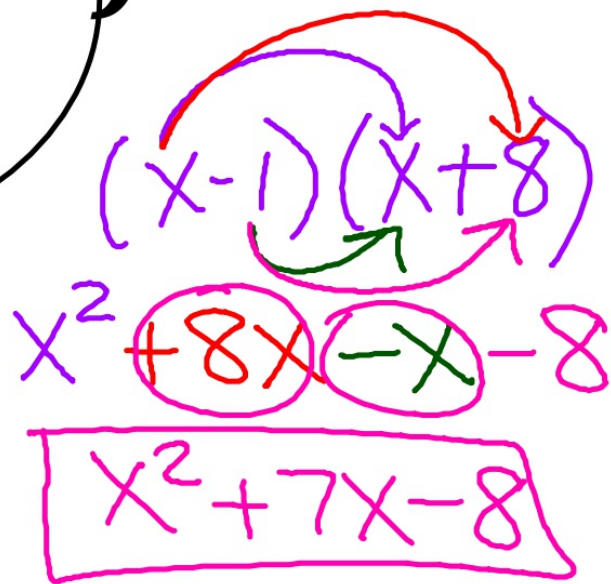
#6

$$(x - 1)(x + 8)$$





**Foil Method:** *F - First terms*  
*O - Outer terms*  
*I - Inner terms*  
*L - Last terms*



**Solve using FOIL method:**

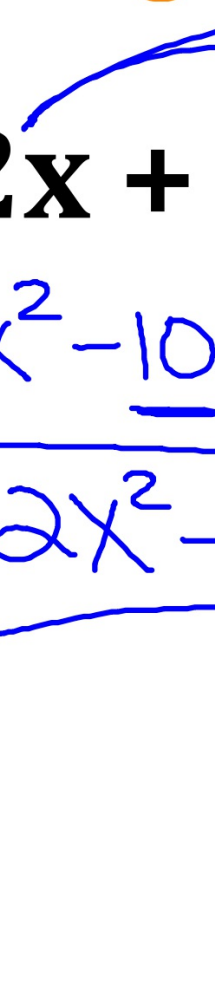
**#8**

$$(x - 10)(x - 4)$$

$$x^2 - \underline{4x} - \underline{10x} + 40$$

$$x^2 - 14x + 40$$

Solve using the FOIL method: #9

$$(2x + 1)(x - 5)$$


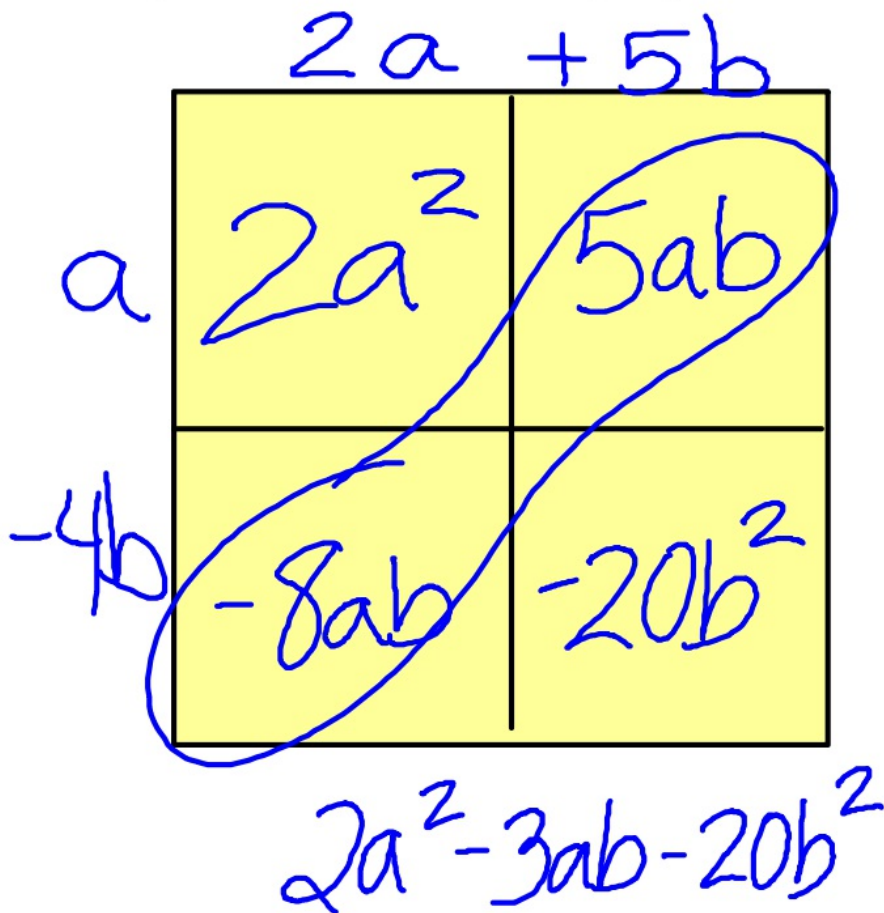
$$2x^2 - \underline{10x} + \underline{x} - 5$$

$$2x^2 - 9x - 5$$

**Box Method:**

#11

$$(2a + 5b)(a - 4b)$$



**Multiplying  
Binomials  
times Trinomials**



#1

$$(x + 4)(x^2 + 3x - 6)$$

$$x^2 + 3x - 6$$

	$x^2$	$+ 3x$	$- 6$
$x$	$x^3$	$3x^2$	$- 6x$
$+ 4$	$4x^2$	$12x$	$- 24$

$$x^3 + 7x^2 + 6x - 24$$

$$(k - 5)(k^2 - k - 8)$$

$$k^3 - k^2 - 8k - 5k^2 + 5k + 40$$

$$k^3 - 6k^2 - 3k + 40$$

**You try Distributive:**

$$(m + 3)(m^2 + 3m + 5)$$

$$m^3 + 3m^2 + 5m + 3m^2 + 9m + 15$$

$$m^3 + 6m^2 + 14m + 15$$

**Choose your method:**

#8

$$(2x + 2)(4x^2 - 3x - 6)$$

$$\cancel{8x^3} - \cancel{6x^2} - \underline{12x} + \cancel{8x^2} - \underline{6x} - 12$$

$$8x^3 + 2x^2 - 18x - 12$$

***Exit Ticket***  
***2/19/19***

***Simplify:***

***1.  $(2x + 1)(4x^2 - 5x + 3)$***

***2.  $-3x(4x^2 - 10x + 2) + (-3x - 4)$***