

Multiply the following  
binomials: F.O.I.L.



Distributive  
Property

$$(x + 2)(x + 3)$$

$$\begin{array}{l} F \quad x^2 \\ O \quad 3x \\ I \quad 2x \\ L \quad 6 \end{array} \left. \vphantom{\begin{array}{l} F \\ O \\ I \\ L \end{array}} \right\} = \boxed{x^2 + 5x + 6}$$

$$\boxed{(x + 4)^2} = \text{Perfect Squares}$$

Not:  $x^2 + 16$

$$\star (x+4)(x+4) \star$$

$$x^2 + 8x + 16$$

$$(x + 5)(x - 6)$$

$$\begin{array}{r} \phantom{x} \quad x \quad +5 \\ x \quad \left| \begin{array}{|c|c|} \hline x^2 & 5x \\ \hline -6x & -30 \\ \hline \end{array} \right. \\ -6 \end{array} = \underline{\underline{x^2 - x - 30}}$$

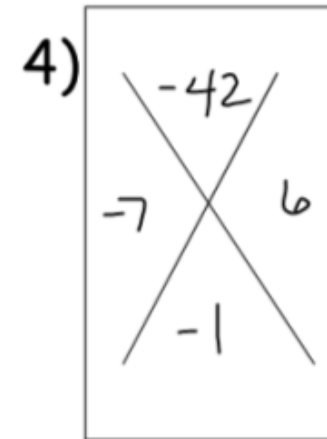
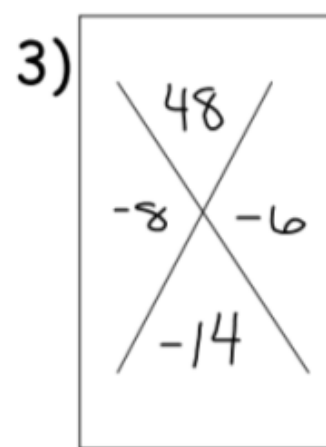
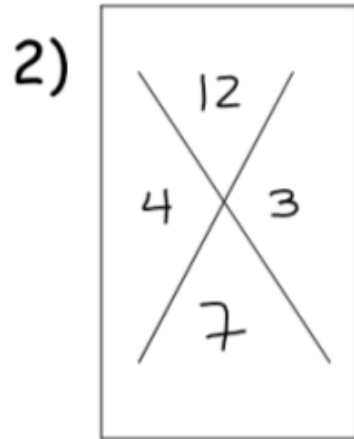
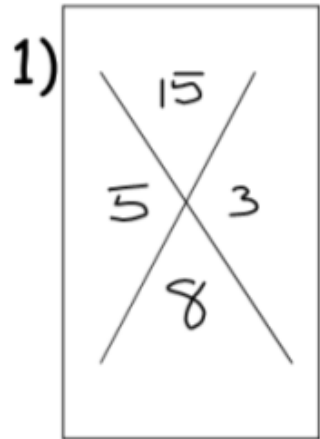
$$(x - 2)(x + 2)$$

Difference  
of  
Squares

$$x^2 + \cancel{2x} - \cancel{2x} - 4$$

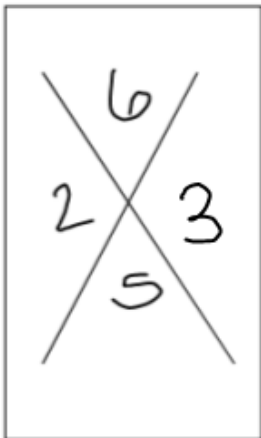
$$x^2 - 4$$

Do you see a pattern????

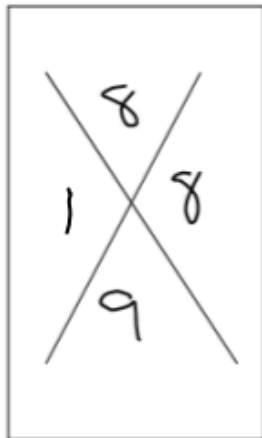


Try these...

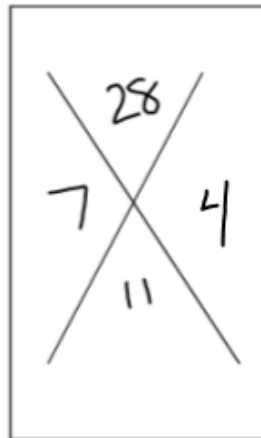
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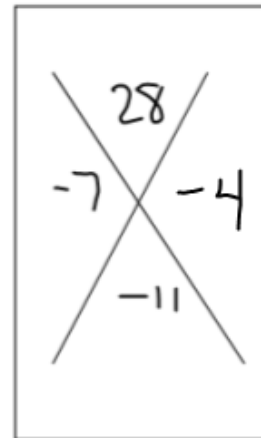
6)



7)

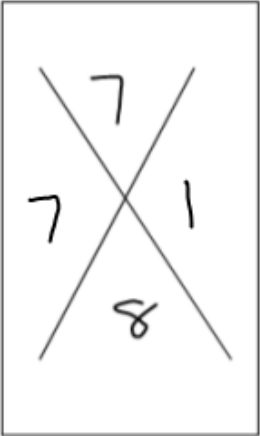


8)

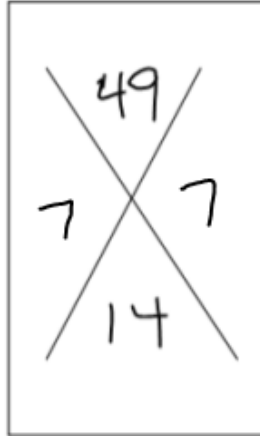


Try these...

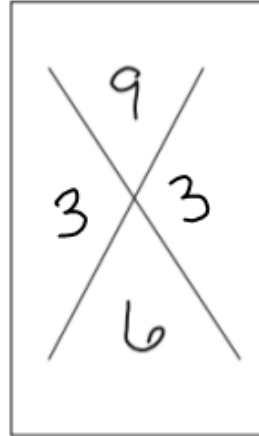
9)



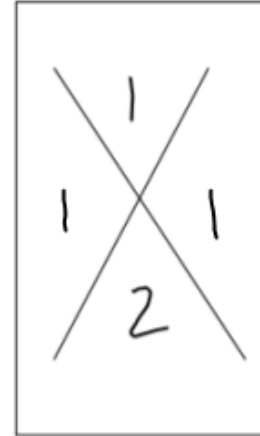
10)



11)



12)



13)

$$\begin{array}{ccc} & 45 & \\ -9 & \times & -5 \\ & -14 & \end{array}$$

14)

$$\begin{array}{ccc} & 36 & \\ 6 & \times & 6 \\ & 12 & \end{array}$$

15)

$$\begin{array}{ccc} & 4 & \\ -1 & \times & -4 \\ & -5 & \end{array}$$

16)

$$\begin{array}{ccc} & 15 & \\ -5 & \times & -3 \\ & -8 & \end{array}$$

17)

$$\begin{array}{ccc} & -15 & \\ 3 & \times & -5 \\ & -2 & \end{array}$$

18)

$$\begin{array}{ccc} & -15 & \\ 5 & \times & -3 \\ & 2 & \end{array}$$

19)

$$\begin{array}{ccc} & -28 & \\ -7 & \times & 4 \\ & -3 & \end{array}$$

20)

$$\begin{array}{ccc} & -42 & \\ -7 & \times & 6 \\ & -1 & \end{array}$$

Set up X-Factors, Solve, Factor

CHECK YOUR ANSWER!!!

$$\left[ \begin{array}{c} \underline{x^2} + \underline{8x} + \underline{15} \\ \begin{array}{ccc} 15 & & \\ 5 & \times & 3 \\ 8 & & \end{array} \end{array} \right]$$

Check

$$\begin{array}{l} \bar{F} \quad x^2 \\ \circ \quad 3x \quad \} \quad 8x \\ | \quad 5x \\ L \quad 15 \end{array}$$

$$\rightarrow (x+5)(x+3)$$

$$\begin{array}{c} \underline{x^2} + \underline{5x} + \underline{6} \\ \begin{array}{ccc} 6 & & \\ 2 & \times & 3 \\ 5 & & \end{array} \end{array}$$

Check

$$\begin{array}{l} 1 \cdot 6 \\ \underline{\underline{2 \cdot 3}} \end{array}$$

$$(x+3)(x+2)$$

$$x^2 + \underbrace{2x + 3x} + 6 + 5x$$

$$z^2 - 8z + 7 \quad \text{Check}$$

$$\begin{array}{ccc} & 7 & \\ -7 & \times & -1 \\ & -8 & \end{array}$$

$$(z-7)(z-1)$$

$$x^2 - 2x - 15 \quad \text{Check}$$

$$\begin{array}{ccc} & -15 & \\ -5 & \times & 3 \\ & -2 & \end{array}$$

$$(x-5)(x+3)$$

$$c^2 - 7c + 10 \quad \text{Check}$$

$$\begin{array}{ccc} & 10 & \\ -5 & \times & -2 \\ & -7 & \end{array}$$

$$(c-5)(c-2)$$

$$a^2 + 11a + 30 \quad \text{Check}$$

$$\begin{array}{ccc} & 30 & \\ 5 & \times & 6 \\ & 11 & \end{array}$$

$$(a+5)(a+6)$$



	Trinomial	X-Factor	Factored Form	Check your Work!!!
1	$x^2 + 5x + 6$			
2	$x^2 + 6x + 8$			
3	$x^2 - 12x + 20$			

4	$x^2 - 9x + 14$			
5	$x^2 + 5x - 6$			
6	$x^2 - 9x - 36$			
7	$x^2 + 7x - 8$			

8

$x^2 - x - 20$

9

$x^2 - 6x - 27$

10

$x^2 - 2x - 48$

11

$x^2 + 11x - 12$

# Homework #2

## Factoring Trinomials