

Warm - up

On the Boards...

2. State the missing signs.

$$(a) \quad x^2 - 9x + 14 = (x \square 2)(x \square 7)$$

$$(b) \quad m^2 - 15m + 26 = (m \square 2)(m \square 13)$$

$$(c) \quad y^2 + yz - 30z^2 = (y \square 6z)(y \square 5z)$$

$$(d) \quad a^2 + 10ab + 9b^2 = (a \square b)(a \square 9b)$$

Factor (a) $c^2 + 8c + 15$

(b) $k^2 - 18k + 77$

(c) $m^2 - 6m - 27$

(d) $g^2 - 16g + 39$

(e) $y^2 + 16y + 28$

(f) $p^2 + 14p - 72$

FACTORING TRINOMIALS PART 2

Learning Goals - factor trinomials with a
coefficient in front of the x^2

ex. $2m^2+2m-112$

How is this question the **same** or **different** from questions last day?

same

trinomial

different

there is a 2
at the front

Steps

1. Common Factor

2. Factor the remaining trinomial

$$2(m^2 + m - 56)$$

$$= 2(m - 7)(m + 8)$$

Factor the following trinomials.

$$3x^2 + 21x + 36$$

$$= 3(x^2 + 7x + 12)$$

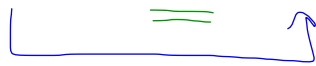
$$= 3(x + 4)(x + 3)$$

$$5x^2 - 30x + 40$$

$$= 5(x^2 - 6x + 8)$$

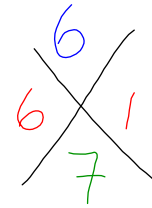
$$= 5(x - 2)(x - 4)$$

$$2x^2 + 7x + 3$$



Steps

1. Make an X
2. Multiply first and last = put on top
3. Middle number = put on bottom
4. Look for 2 numbers
 ___ x ___ = top
 ___ + ___ = bottom
5. Fill in box
6. Common Factor to the side and top



$$\underline{6} \times \underline{1} = 6$$

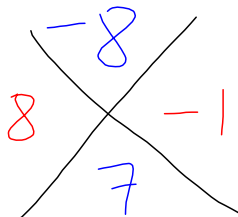
$$\underline{6} + \underline{1} = 7$$

|

$$\therefore (x+3)(2x+1)$$

$2x$	x	3
	$2x^2$	$6x$
	$1x$	3

$$2x^2 + 7x - 4 = (2x - 1)(x + 4)$$



x	$2x$	-1
	$2x^2$	$-1x$
4	$8x$	-4

|

Let's practice...at the Boards

1. $\begin{array}{c} 9 \\ -3 \quad \times \quad -3 \\ -6 \end{array}$

2. $\begin{array}{c} 4 \\ 2 \quad \times \quad 2 \\ 4 \end{array}$

3. $\begin{array}{c} -30 \\ -15 \quad \times \quad 2 \\ -13 \end{array}$

4. $\begin{array}{c} -84 \\ 12 \quad \times \quad -7 \\ 5 \end{array}$

5. $\begin{array}{c} -24 \\ 3 \quad \times \quad -8 \\ -5 \end{array}$

6. $\begin{array}{c} 6 \\ -3 \quad \times \quad -2 \\ -5 \end{array}$

7. $\begin{array}{c} -15 \\ -15 \quad \times \quad 1 \\ -14 \end{array}$

8. $\begin{array}{c} -75 \\ -15 \quad \times \quad 5 \\ -10 \end{array}$

9. $\begin{array}{c} 12 \\ 3 \quad \times \quad 4 \\ 7 \end{array}$

1. $\begin{array}{c} -6 \\ -3 \quad \times \quad 2 \\ -1 \end{array}$

2. $\begin{array}{c} -12 \\ -12 \quad \times \quad 1 \\ -11 \end{array}$

3. $\begin{array}{c} 7 \\ 7 \quad \times \quad 1 \\ 8 \end{array}$

4. $\begin{array}{c} -8 \\ 8 \quad \times \quad -1 \\ 7 \end{array}$

5. $\begin{array}{c} 12 \\ -3 \quad \times \quad -4 \\ -7 \end{array}$

6. $\begin{array}{c} 20 \\ -4 \quad \times \quad -5 \\ -9 \end{array}$

7. $\begin{array}{c} 16 \\ -4 \quad \times \quad -4 \\ -8 \end{array}$

8. $\begin{array}{c} 2 \\ -2 \quad \times \quad -1 \\ -3 \end{array}$

9. $\begin{array}{c} 18 \\ -3 \quad \times \quad -6 \\ -9 \end{array}$

On the Boards...

Factor Fully

$$-7x^2 - 21x - 14$$

$$3x^2 + 5x - 2$$

$$3x^2 - 13x + 4$$

$$3x^2 - 5x - 28$$

Factor Fully

$$-7x^2 - 21x - 14$$

$$= -7(x^2 + 3x + 2)$$

$$= -7(x+2)(x+1)$$

$$3x^2 + 5x - 2$$

$$\begin{array}{c}
 -6 \\
 6 \quad -1 \\
 \times \\
 5
 \end{array}$$

$$3x \quad -1$$

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

$$\therefore (3x-1)(x+2)$$

$$3x^2 - 13x + 4$$

$$\begin{array}{ccc} & 12 & \\ -12 & \times & -1 \\ & -13 & \end{array}$$

$$3x \quad -1$$

x	$3x^2$	$-1x$
-4	$-12x$	4

$$\therefore (3x-1)(x-4)$$

$$3x^2 - 5x - 28$$

$$\begin{array}{ccc} & -84 & \\ 7 & \times & -12 \\ & -5 & \end{array}$$

$$x \quad -4$$

$3x$	$3x^2$	$-12x$
7	$7x$	-28

$$\therefore (3x+7)(x-4)$$

Homework

**pg. 259 #, 3a, 4abc,
5abc, 7 just factor**