

Warm Up

Factor : (gcf)

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

Factor : (trinomial)

$$x^2 + 5x + 6$$

Factor: (trinomial)

$$x^2 + 5x + 6$$

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

Diagram illustrating the multiplication of $(x + 2)(x + 3)$ using the FOIL method:

- Outer terms: x and 3 are connected by a curved line, with $3x$ written below it.
- Inner terms: 2 and x are connected by a curved line, with $2x$ written below it.
- A horizontal line is drawn below the two inner terms.
- The sum of the inner terms, $5x$, is written below the horizontal line.

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

Check:

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

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

$$x^2 + 5x + 6$$

$$x^2 + 8x + 7$$

7, 1

$$(x + 1)(x + 7)$$

check :

$$x^2 + 7x + 1x + 7$$

$$x^2 + 8x + 7$$

$$x^2 + 13x + 36$$

$$(x + 4)(x + 9)$$

4, 9
3, 12
6, 6
1, 36
2, 18

$$x^2 - 13x + 36$$

-4, -9

$$(x - 4)(x - 9)$$

$$x^2 - 10x + 24$$

$$(x-4)(x-6)$$

$$2x^2 - 28x + 80$$

$\hat{2 \cdot x \cdot x}$ $\hat{2 \cdot 2 \cdot 7 \cdot x}$ $\hat{2 \cdot 2 \cdot 2 \cdot 5}$
 (use gcf 1st)

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

$$2(x-4)(x-10)$$

$$x^2 - 7x + 10$$

$$(x-2)(x-5)$$

$$x^2 + 2x - 48$$

+8, -6

$$(x + 8)(x - 6)$$

$$x^2 - 2x - 48$$

$$(x - 8)(x + 6)$$

$$x^2 - 4x - 21$$

7, 3

$$(x-7)(x+3)$$

$$x^2 + 9x - 36$$

$$(x+12)(x-3)$$

1, 36
2, 18
-3, 12
4, 9
6, 6

Daily Check

1) $x^2 + 7x - 30$

2) $x^2 - 5x + 6$

You must
check
each
problem.

Factor : (gcf)

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

Diagram illustrating the prime factorization of each term:

- $3x^3$ is factored as $3 \cdot x \cdot x \cdot x$. The 3 is highlighted in light blue, and each x is highlighted in light blue. A blue bracket is drawn above the three x's.
- $2x^2$ is factored as $2 \cdot x \cdot x$. The 2 is highlighted in light blue, and each x is highlighted in light blue. A blue bracket is drawn above the two x's.
- $6x$ is factored as $2 \cdot 3 \cdot x$. The 2 and 3 are highlighted in light blue, and the x is highlighted in light blue. A blue bracket is drawn above the 2 and 3.

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