

FACTORING QUADRATICS & DIFFERENCE OF SQUARES

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FACTORING QUADRATICS

$$x^2 + bx + c$$

To factor trinomials like these, you need to _____ that:

- **Multiply to “c”** (the constant)

$$\square \times \bigcirc = c$$

- **Add to “b”** (the coefficient of the middle term)

$$\square + \bigcirc = b$$

Then set up brackets $(x + \square)(x + \bigcirc)$ and plug the numbers in!

Example 1 Factor.

a) $x^2 + 7x + 10$

b) $x^2 + 6x - 27$

c) $x^2 - 4x + 3$

d) $x^2 - x - 5$

Example 2 Factor.

a) $2x^3 + 12x^2 - 32x$

b) $x^5 - 8x^3 - 20x$

In this lesson, I learned _____

FACTORIZING OTHER QUADRATICS

$x^2 + bxy + cy^2$

For these types of quadratics there will be two different letters inside each set of brackets— $(x \quad y)(x \quad y)$.

Example 3 Factor: $a^2 + 11ab + 10b^2$

FACTORIZING A DIFFERENCE OF SQUARES

$a^2 - b^2$

A difference of squares is a binomial where both terms are perfect squares and are being subtracted.

Square root of the 1st term

Expressions like $a^2 - b^2$ factor as $(a - b)(a + b)$. Notice—one binomial is plus and the other is minus.

Square root of the 2nd term

Example 4 Factor.

a) $16 - y^2$

b) $25x^2 - 64y^2$

c) $3x^2 - 300$

d) $x^2 + 49$

NOTE: To check any of your answers, FOIL!