Bellwork

Factor each of the following expressions:

1. $x^2 + 2x - 15$

2. $3x^2 - 16x - 12$

3. $4x^2 - 9$

Solving Quadratic Equations:

By Factoring

Factoring techniques are the same as before:

If a = 1

1. List all the factors of the constant c
2. Identify the set that combine by the 2nd sign to get the middle #.
3. Rewrite breaking the middle term up.
4. Factor by Grouping.

If a ≠ 1

1. Multiply a times c.
2. Factor ac
3. Follow steps 2 - 4 of when a = 1

Procedure

Step 1: Set the equation equal to 0.
Move **EVERYTHING** to one side!
NOTE: Be sure the squared term is positive!

Step 2: Factor the expression.

Step 3: Using the Zero Product Property set each of the factors equal to zero.

Step 4: Solve each of these for the variable.

Step 5: Check your answers by plugging them into the original equation and work them out.

Examples

Solve each of the following quadratics by factoring:

1. $9 = -x^2 + 6x$

2. $6x^2 - 17x = -12$

More Examples

Solve each of the following quadratics by factoring:

3. $-x^2 + 56 = -10x$

4. $2x^2 + 5x = -2$

More Examples

Solve each of the following quadratics by factoring:

5. $x - x^2 = -30$

6. $x^2 = -8x - 16$