

Algebra Math
Lesson: April 8

Learning Target:

Students will use factoring and the
Zero Product Property to solve Quadratic Equations

Let's Get Started:

Review this video how to [Factor a Quadratic Function](#)
Additional Factoring Videos linked at the end for review

Lesson/Practice:

Watch this video

Solving using the Zero Product Property and Factors

1. Watch the video linked above for an explanation on the Zero Product Property and how to use it to solve a quadratic.
2. Key points:
 - a. Equation must be equal to 0
 - b. Equation must be in factored form
 - c. Set each factor equal to 0
 - d. Solve each factor equation
3. Example:

$$X^2 + 4x - 5 = 0 \quad \text{-----> Is the equation equal to 0? YES!}$$

$$(x + 5)(x - 1) \quad \text{-----> The equation is now factored!}$$

$$x + 5 = 0 \qquad x - 1 = 0 \qquad \text{-----> Each factor is set equal to 0}$$

$$x = -5 \qquad x = 1 \qquad \text{-----> Each equation from above is solved}$$

Therefore $x = -5$ and 1

Practice Problems:

Practice your learning with these practice problems.

Solve each quadratic function by factoring.

1. $x^2 - 7x - 8 = 0$

2. $x^2 + 3x + 2 = 0$

3. $x^2 + 10x = -25$

4. $x^2 - 12x = -20$

5. $x^2 - 11x - 12 = 0$

6. $x^2 + 5x = 24$

Which of the following are solutions of the polynomial: $x^2 - 13x + 12$?

- A. 1
- B. -1
- C. 12
- D. -12
- E. 13
- F. -13

Answer Key:

Once you have completed the problems, check your answers here.

1. $x = 8$ and -1

2. $x = -2$ and -1

3. $x = -5$

4. $x = 10$ and 2

5. $x = 12$ and -1

6. $x = -8$ and 3

7. A and C

Additional Practice:

Click on the links below to get additional practice on factoring!

[Greatest Common Factor Video Review](#)

[Factoring Quadratic Functions](#)

[Factoring Quadratic Functions Part 2](#)

[Factoring Special Cases](#)

[Zero Product Property Practice](#)