Lesson 4.1.4: The Zero Product Property

Targets:

1. I understand how to use the Zero Product Property to solve quadratic equations.

Warm Up:

Consider the equation $a \cdot b \cdot c \cdot d = 0$.

What value of a would make the equation true?

What value of b would make the equation true?

What value of c would make the equation true?

What value of d would make the equation true?

Practice 1

Find values of c and d that satisfy each of the following equations:

1.) $cd = 0$

2.) $(c-5)d = 0$

3.) $(c-5)(d+3) = 0$

Practice 2

Remember back to Lesson 1.3.7 when we were first introduced to the Zero Product Property. Use what you already know to solve the following equations:

a. $(x+1)(x+2) = 0$

b. $(3x-2)(x+12) = 0$

c. $(x+4)(x-6)(x-10) = 0$

Practice 3

Combine what you know about factoring quadratic expressions and what you know about the Zero Product Property to solve the following equation: $x^2 - 11x + 19 = -5$

Practice 4

Solve each equation and show your work.

a.) $7x^2 + x = 0$

b.) $7r^2 - 14r = -7$

c.) $2d^2 + 5d - 12 = 0$

Exit Ticket

Solve the following equations.

a.) $x^2 + 15x + 40 = 4$

b.) $7x^2 + 2x = 0$

c.) $b^2 + 5b - 35 = 3b$