

# Algebra II

4-7

## Solving Equations by Factoring

Nov 5-8:12 AM

Given:  $a \cdot b = 0$   
Factors <sup>product</sup>

If an equation is factored and equal to zero,

What can we conclude?

$$a=0 \text{ or } b=0$$

We can set the factors equal to zero and solve.

Nov 8-9:51 AM

Solve. Identify all double roots. (pg 196)

$$1) (x - 1)(x - 4) = 0$$

$$x - 1 = 0 \quad x - 4 = 0$$

$$x = 1 \quad x = 4$$

$$\{1, 4\}$$

It's factored,  
It's equal to zero,  
We can solve!  
WOO HOO

Nov 8-9:54 AM

$$7) z^2 + 3 = 4z$$

$$z^2 - 4z + 3 = 0$$

$$(z - 3)(z - 1) = 0$$

$$z - 3 = 0 \quad \text{or} \quad z - 1 = 0$$

$$z = 3 \quad z = 1$$

$$\{3, 1\}$$

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$$21) (y-4)^2 = 2y$$

$$(y-4)^2 - 2y = 0$$

$$(y-4)(y-4) - 2y = 0$$

$$y^2 - 8y + 16 - 2y = 0$$

$$y^2 - 10y + 16 = 0$$

$$(y-8)(y-2) = 0$$

$$y-8=0 \quad y-2=0$$

$$y=8 \quad y=2$$

$$\{8, 2\}$$

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$$29) x^4 - 2x^2 + 1 = 0$$

$$(x^2 - 1)(x^2 - 1) = 0$$

$$(x+1)(x-1)(x+1)(x-1) = 0$$

$$x+1=0 \quad \text{or} \quad x-1=0$$

$$x=-1 \quad x=1$$

$$\{\pm 1\}$$

double roots

Nov 8-10:00 AM

Pg 196

2-52 even

Nov 8-10:03 AM