Bell Work

Grab your calc.

4/7/2015

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Solve the following when y=0.

$$y = -5x^{2} + 320$$

$$0 = -5x^{2} + 320$$

$$-320 = -5x^{2}$$

$$-320 = -5x^{2}$$

$$-5 = -5$$

$$\sqrt{64} = \sqrt{x}$$

Before we learned how to solve linear equations.

Now we are going to learn to solve polynomial equations.

Because this will help us analyze vertical motion, which can be found often in every day life.

Given the following equations, let y=0 and solve for x.

List your solution as an ordered pair.

$$(-3, 0)$$

$$y = 7x + 21$$

$$0 = 7 \times + 21$$

$$-21 = 7 \times$$

$$-21 = 7 \times$$

$$3 = X$$

$$0 = X$$

$$\frac{2}{3}x+6=y$$

$$\frac{2}{3}x+6=0$$

$$-6-6$$

$$\frac{3}{2}x=-6$$

$$x=-6$$

$$x=-9$$

$$y=0$$

If you are given two variables, a and b, and I ask you to multiply them but your answer must be zero....

...What could you do?

Make a or b equal to Zero.

Anything multiplied by Zero, equals zero!

KEY CONCEPT

For Your Notebook

Zero-Product Property

Let \underline{a} and \underline{b} be real numbers. If ab = 0, then a = 0 or b = 0.

The zero-product property is used to solve an equation when one side is zero and the other side is a product of polynomial factors. The solutions of such an equation are also called **roots**.

Use the zero product property to solve:

$$(x-4)(x+2) = 0$$

$$x-4 = 0$$

$$+4 + 4$$

$$x = 4$$

$$y = 0$$

$$(4, 0)$$
because $y = 0$

$$(-2, 0)$$

Use the zero product property to solve:

$$(x-5)(x-1) = 0$$

$$x - 5 = 0$$

$$+5 + 5$$

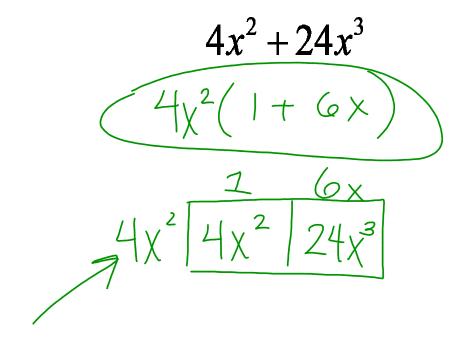
$$x = 5$$

$$y = 0$$

$$(5, 0)$$

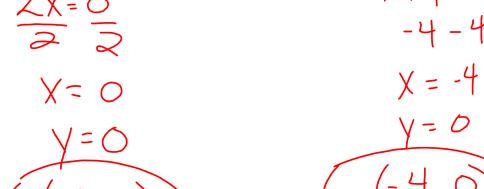
$$(1, 0)$$

Factor out the GCF



Solve the following using the zero product property (you may have to find the GCF first)

 $2x^{2} + 8x = 0$ 2x(x + 4) = 0 x + 4 = 0 -4 - 4



Solve the following using the zero product property

(you may have to find the GCF first)

$$6n^{2} = 15n$$

$$-15n - 15n$$

$$(an^{2} - 15n = 0)$$

$$3n = 0$$

$$3n = 0$$

$$2n - 5 = 0$$

$$+5 + 5$$

$$n = 0$$

$$\sqrt{5/2}, 0$$