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 often be found in everyday life.

Given the following equations, let $y = 0$ and solve for x. List your answer as an ordered pair.

1.

2.

If you are given two variables, $a \: and \: b$, and are asked to multiply them but your answer must be zero –

What could you do?

Zero-Product Property: Let $a \: and \: b$ be real numbers. If _____, then _____ OR _____.

The solutions of the zero product property are called: _____.

Use the zero product property to solve the following:

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

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

Factor out the GCF:

1. $4x^2 + 24x^3$

Use the zero product property to solve the following (you may have to factor out the GCF first):

1. $2x^2 + 8x = 0$

3. $a^2 + 5a = 0$

2. $6n^2 = 15n$

4. $3s^2 - 9s = 0$