Notes
Algebra Section 9.4
Pages 575-580

Goal: "You will solve polynomial equations"

Vocabulary:

Roots: The _____ of a zero-product property.

Zero-product property: If _____=0, then either _____ or _____ has to =0.

Solve using the zero-product property:

Ex: $(x + 2)(x + 4) = 0$ Either the first set of parentheses or the second set of parentheses has to =0
For the first set of parentheses to =0 then x has to = _____
For the second set of parentheses to =0 then x has to =_____

So, $x=$ or $x=$

Solve:

Ex: $(x - 5)(x - 1) = 0$ **Ex:** $(x + 3)(x - 5) = 0$

Factor by finding the Greatest Common Factor:

Ex: $12x + 42y$ What do both terms have in common that you can divide by?
Look for the **greatest** factor they have in common.

When you factor by using the GCF you are essentially:

Which means you could check your answer by:

Ex: $4x^4 + 24x^3$ **Ex:** $14m + 35n$ **Ex:** $8x + 12y$

Ex: $14y^2 + 21y$ **Ex:** $6x^2y + 9xy^2$ **Ex:** $4t^2 - 2t$

Solve by factoring first:

Ex: $2x^2 + 8x = 0$ **Ex:** $3x^2 + 18x = 0$

Ex: $a^2 + 5a = 0$ **Ex:** $3s^2 - 9s = 0$

Solve by factoring:

Ex: $6n^2 = 15n$ **Ex:** $4x^2 = 2x$ **Ex:** $4s^2 = 14s$

Vertical Motion Model:

$h =$ $t =$

$v =$ $s =$

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Ex: A startled armadillo jumps straight into the air with an initial velocity of 14 ft/s. After how many seconds does it land back on the ground?

Ex: A dolphin jumped out of the water with an initial velocity of 32 ft/s. How many seconds does it take for the dolphin to re-enter the water?