

Algebra I

Notes Section 84

Solve Polynomial Equations in Factored Form

Big Ideas

1. How to use the zero-product property to solve a polynomial equation in factored form.
2. How to rewrite an equation so that it can be factored and then solved.

VOCABULARY

Zero-Product Property: _____

Roots: _____

Vertical Motion Model: _____

EXAMPLE 1 Solve.

a. $(x - 4)(x + 2) = 0$ b. $(x - 5)(x - 1) = 0$ c. $(x - 4/3)(3x + 11) = 0$

EXAMPLE 2 Factor out the greatest common monomial factor.

a. $12x + 42y$ _____

b. $4x^4 + 24x^3$ _____

c. $14m + 35n$ _____

d. $14y^2 + 21y$ _____

EXAMPLE 3 Solve.

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

b. $3x^2 + 18x = 0$

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

EXAMPLE 4 Solve.

a. $6n^2 = 15n$

b. $4x^2 = 14x$

c. $4x^2 = -2x$

EXAMPLE 5 A startled armadillo jumps straight into the air with an initial vertical velocity of 14 feet per second. After how many seconds does it land on the ground?

Vertical Motion Model: _____