College Algebra

Sections 4.8

Radical Equations and Power Functions

In this section we solve a variety of equations, all of which reduce to linear or quadratic in form. As a reminder, those forms are:

$ax + b = 0$ Linear

$ax^2 + bx + c = 0$ Quadratic

The methods for solving these types of equations have already been discussed.

Students must be familiar with rational exponents and radical notation. Please review p 341 as needed.

Radical Equations

These are equations that contain radicals, like $\sqrt[3]{x^2+4}$. It is very important we understand the domain of these equations and which values from the real numbers are restricted, if any.

An illustration

Example: Solve the following radical equations:

(a) $2x = \sqrt{21-5x}$ **(b)** $\sqrt{4-3x} = x+8$ **(c)** $\sqrt[3]{z+1} = -3$

Equations Involving Rational Exponents, Quadratic Forms

Example: Solve $3x^{3/2} + 4 = 85$

Example: Solve $8n^{-2} + 14n^{-1} = 15$

Example: Solve $3z^{2/3} - z^{1/3} - 2 = 0$

Power Functions

Form: $f(x) = x^b$ where b is a constant.

Keplers Law handout: