Solving other Types of Equations

An Equation Involving Fractional Expressions

Example 1: Solve the equation

$$\frac{3}{x} - \frac{2}{x-3} = \frac{-12}{x^2-9}$$

An Equation Involving a Radical

Example 2: Solve the equation

$$2x = 1 - \sqrt{2-x}$$

A Fourth-Degree Equation of Quadratic Type

Example 3: Find all solutions of the equation

$$x^4 - 8x^2 + 8 = 0$$

An Equation Involving Fractional Powers

Example 4: Find all solutions of the equation

$$x^{1/3} + x^{1/6} - 2 = 0$$

An Absolute Value Equation

$$|X| = C \text{ is equivalent to } X = C \text{ or } X = -C$$

Example 5: Solve the equation

$$|2x - 5| = 3$$

Example 6: Find all real solutions of the equation

- $\dfrac{x^2}{x+100} = 50$

- $\sqrt{2x - 1} = \sqrt{3x - 5}$

- $\dfrac{x}{2x+7} - \dfrac{x+1}{x+3} = 1$

- $x^4 - 5x^2 + 4 = 0$

- $|3x + 5| = 1$

- $|x - 6| = -1$

- $\sqrt{x} - 3\sqrt[4]{x} - 4 = 0$

- $4(x+1)^{\frac{1}{2}} - 5(x+1)^{\frac{3}{2}} + (x+1)^{\frac{5}{2}} = 0$