Math 1090 – Business Algebra

Section 3.1 Quadratic Equations in One Variable

Objectives:
- Identify a quadratic equation in one variable.
- Apply the Zero Product Property to solve quadratic equations in one variable.
- Apply four strategies for solving a quadratic equation in one variable.

Definition: A Quadratic Equation can be written in the form

\[ ax^2 + bx + c = 0, \text{ where } a, b, c \in \mathbb{R}, a \neq 0 \]

Ex 1: Solve \( 5x^2 - 32 = x^2 + 8 \)

Strategies to Solve
1. Square Root Technique
2. Factor Technique
3. Completing the Square
4. Quadratic Formula

Ex 2: Solve \( 2x(5x + 6) = 16 \)
Ex 3: Solve $y^2 + y - 4 = 0$

Ex 4: Solve $x^2 + 4 = 6x$

Ex 5: Solve $\frac{1}{x-10} - \frac{1}{x-9} = 1$