Chapter 5 Section 5: Solving Polynomial Equations

Solving a Polynomial Equation by Factoring

Example 1: Solve $5x^3 - 40x^2 + 80x = 0$

The Rational Root Theorem

Example 2: Find all real solutions of $x^3 - 5x^2 - 2x + 24 = 0$

1. List possible Roots to Try:

2. Try possible roots using synthetic Division:

3. Factor what’s left:
**Example 3**: Find all real zeros of $f(x) = 6x^4 - 11x^3 - 16x^2 + 2x + 4$

1. List possible roots to try:

2. Look at graph to find possible zeros:

3. Try possible roots using synthetic division:

4. Factor what’s left if possible: