

Mini-Lecture 3.5

Inequalities Involving Quadratic Functions

Learning Objectives:

1. Solve inequalities involving a quadratic function

Examples:

1. Solve each inequality.

$$(a) x^2 - x - 12 \leq 0$$

$$(b) -2x^2 > -11x + 15$$

$$(c) 3x^2 + 6x > 45$$

Teaching Notes:

- A problem that students have with inequalities is the notation. Make sure they understand how to properly express the answer in interval notation.

Answers:

1. (a) $[-3, 4]$ (b) $\left(\frac{5}{2}, 3\right)$ (c) $(-\infty, -5) \cup (3, \infty)$