NAME _____ DATE _____

Study Guide

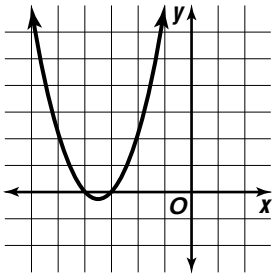
Student Edition
Pages 620–627

Solving Quadratic Equations by Graphing

A **quadratic equation** is an equation in which the value of the related quadratic function is 0. The solutions of a quadratic equation are called the **roots** of the equation. The roots of a quadratic equation can be found by graphing the related quadratic function and finding the x-intercepts or **zeros** of the function.

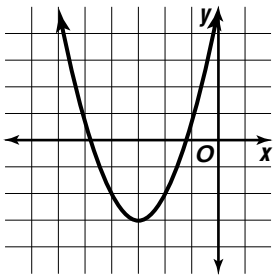
Examples: Solve each equation by graphing. If exact roots cannot be found, estimate the roots by stating the consecutive integers between which the roots lie.

a. $x^2 + 7x + 12 = 0$



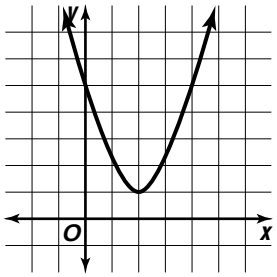
-3 and -4

b. $x^2 + 6x + 6 = 0$



between -5 and -4 and between -2 and -1

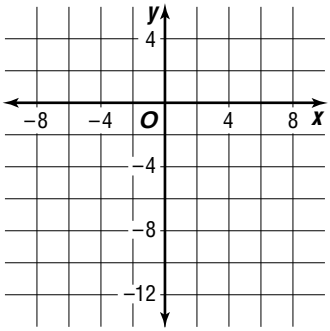
c. $x^2 - 4x + 5$



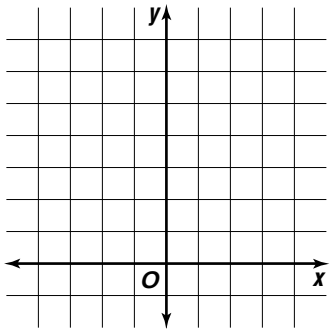
no real roots

Solve each equation by graphing. If exact roots cannot be found, state the consecutive integers between which the roots lie.

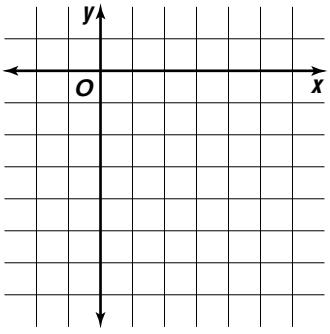
1. $x^2 - x - 12 = 0$



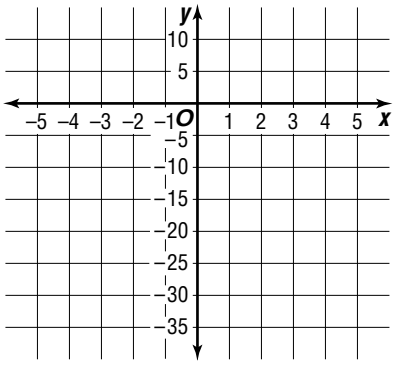
2. $x^2 + 4 = 0$



3. $4x^2 - 12x + 3 = 0$



4. $4x^2 = 35 - 4x$



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