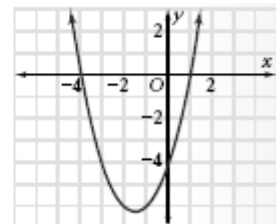
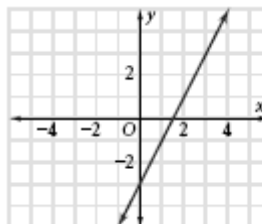


Unit 5: Quadratic Functions
Day 15 Notes Solving Quadratic Equations
(PH 10-4)

Name: _____
Date: _____ **Hour:** _____

Investigation: Finding x-intercepts



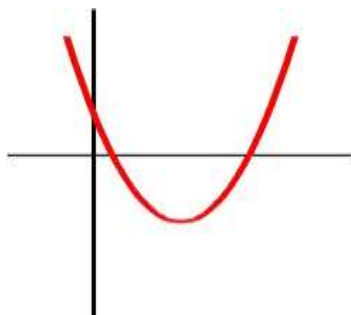
1. Find the x-intercept of the *linear* graph.
2. a. Solve $2x - 3 = 0$.

b. Is the solution of $2x - 3 = 0$ the same as the x-intercept of $y = 2x - 3$?
3. Find the x-intercepts of the *quadratic* graph.
4. Do the x-intercepts found in Question 3 make the equation $x^2 + 3x - 4 = 0$ true?

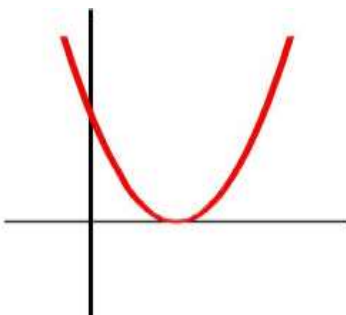
STANDARD FORM OF A QUADRATIC EQUATION: $f(x) = ax^2 + bx + c$

Quadratic equations will have one of the following types of real number solutions.

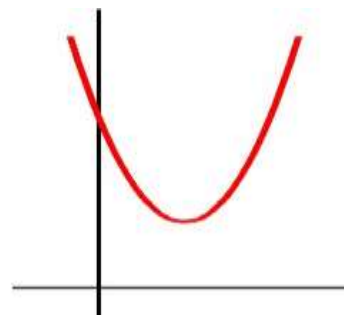
two real solutions



one real solution



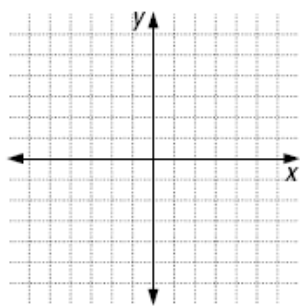
no real number solution



Solutions are at the x-intercepts.
They are also called the **zeros** of the function.
These are found when $y = 0$.

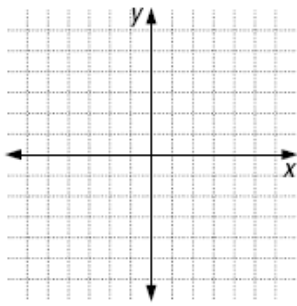
Example 1: Solve each equation by graphing the related function. If there is no solution, write *no solution*.

a.



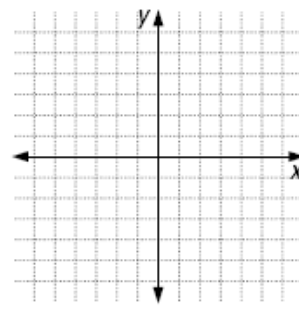
$$x^2 - 4 = 0$$

b.



$$2x^2 = 0$$

c.



$$\frac{1}{3}x^2 + 4 = 0$$

Example 2: Solve each equation by finding square roots. This method only works if “b” is zero.

a. $t^2 - 25 = 0$

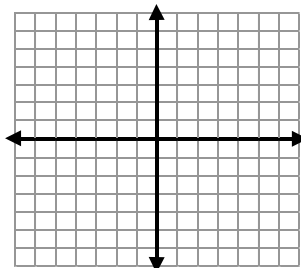
b. $3n^2 + 12 = 12$

c. $32g^2 - 2 = 0$

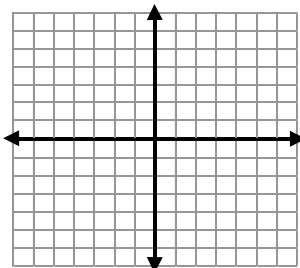
Homework: pg 531-533 #1-9 odd, 10-21, 29-41 odd, 42 (5 graphs). For #41-42 use the formula $A = \frac{1}{2}bh$.

Use these graphs for exercises 1-9 odd. Show the work for all other problems on a separate sheet of paper.

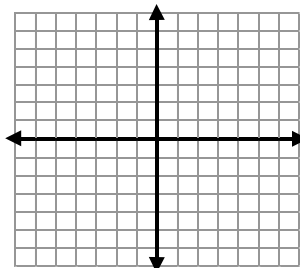
1.



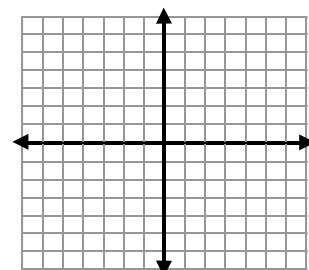
3.



5.



7.



9.

