

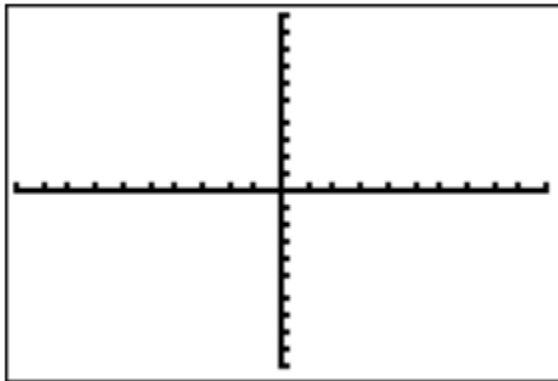
7.4 Factored Form of a Quadratic Function

Recall: Standard form of a quadratic:

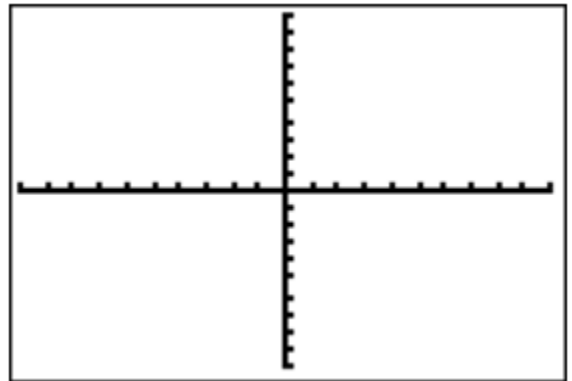
Factored form of a quadratic: _____

What is the connection between factored form of a quadratic and the x-intercepts of the equation? Graph the following quadratic equations and find the x-intercepts. Can you make a conjecture about the factored form of a quadratic and the x-intercepts of the equation?

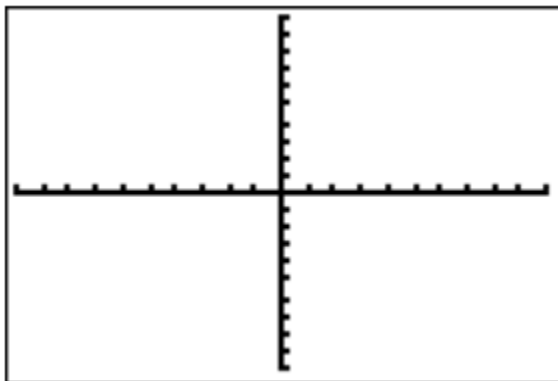
1. $2(x - 4)(x + 5) = 0$



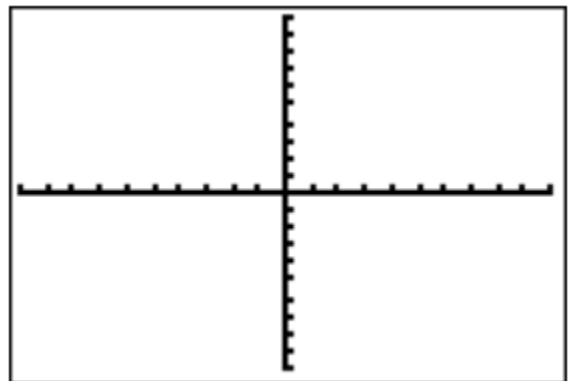
2. $-(x - 1)(x - 8) = 0$



3. $x(x + 3) = 0$



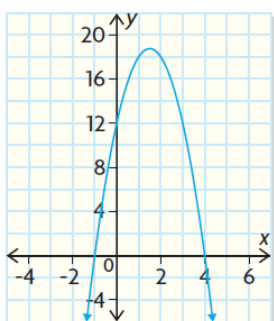
4. $(x + 2)^2 = 0$



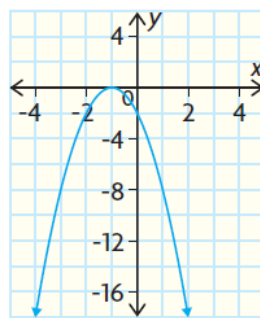
Example 1: Graph the quadratic function $y = 2x^2 + 14x + 12$ using your graphing calculator. Be sure to sketch the window. State the domain and range.

Example 2: Determine the equation (standard form) of each graph.

a)



b)



Using the graph of quadratic functions to solve problems:

Example 3: The members of a Ukrainian church hold a fundraiser every Friday night in the summer. They usually charge \$6 for a plate of perogies. They know, from previous Fridays, that 120 plates of perogies can be sold at this price, but, for each \$1 price increase, 10 fewer plates will be sold. What should the members charge so that they raise as much money as possible?

