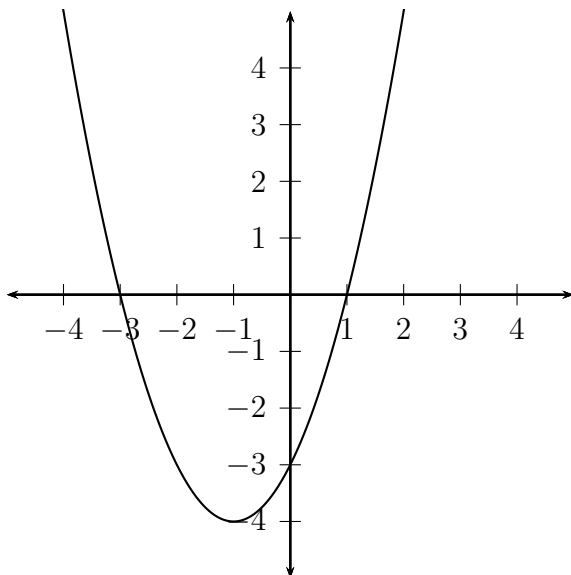# Review for Exam 2
MA 105
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1) Use the graph of the quadratic function $f(x)$ to determine the solution for where $f(x) \le 0$ and for where $f(x) > 0$.

2) Graph the function $f(x) = (x+2)^2 - 1$.

3) Solve the inequality or state that there is no solution: $x^2 + 4x > 5$.

4) The price and quantity of a certain product follow the demand equation $p = -\frac{x}{4} + 30$ for $0 \le x \le 120$. Express revenue R as a function of x. What is the revenue if 10 units are sold? What quantity maximizes the revenue? What is the maximum revenue? What price should be charged for the product to maximize the revenue?

5) Solve the inequality: $x(x - 2) > 48$.

6) Determine without graphing if the given quadratic function has a maximum or a minimum. What is its minimum or maximum value? $f(x) = 3x^2 + 6x + 10$.

7) For $f(x) = x^2 + 6x - 7$, give its vertex, axis of symmetry, intervals of increase and decrease, all intercepts, domain, range, graph, and orientation (up or down).

8) Graph the function $f(x) = x^2 - 4$.

9) A farmer wants to enclose a rectangular field. He has 800 feet of fencing. Express the area of the enclosure as a function of its length. For what value of length is the area of the enclosure maximized? What is this maximum value of the area?

10) Determine if the function $f(x) = 3x^2 + 6x + 3$ has a minimum or a maximum value and find that value.

11) What is the domain of $f(x) = \sqrt{x^2 - 64}$.

12) Solve the inequality $2x^2 + 10x - 48 > 0$.

13) Graph the fucntion $f(x) = -x^2 - 8x$.