

## Quiz 1 - MATH 151

DATE: Week 2, January 21-25

INSTRUCTOR: George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. Find the vertex, the axis of symmetry, the opening direction and the intercepts and, then, roughly (but clearly) sketch the graph of the function  $f(x) = x^2 + 2x - 3$  indicating all points collected.
2. The price  $p$  and the quantity  $x$  sold of a certain product obey the demand equation  $x = -\frac{1}{8}x + 100, 0 \leq p \leq 800$ .
  - (a) Express the revenue  $R$  as a function of  $x$ .
  - (b) What quantity  $x$  maximizes the revenue?
  - (c) What is the maximum revenue?