Math 1823-004 Quiz 1 Spring 2016

Name: Solution

Student Number:

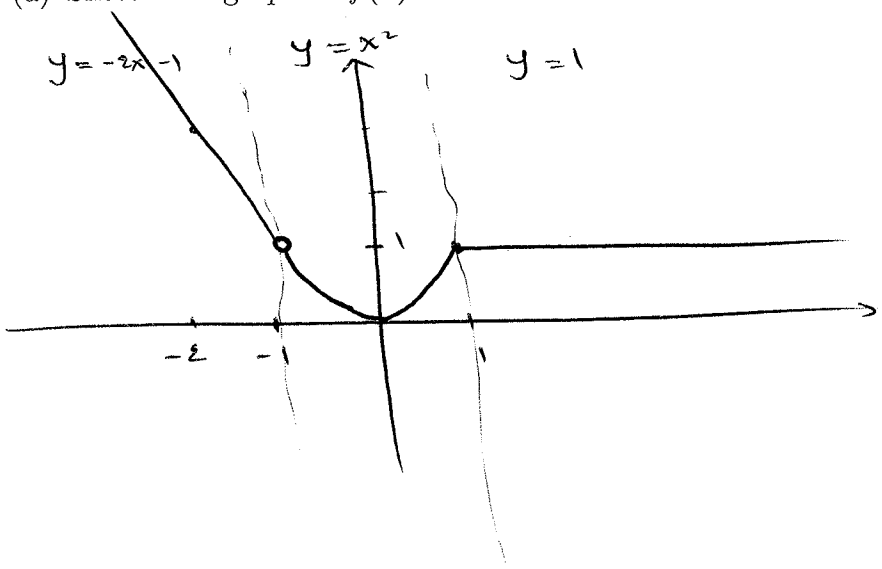
Problem 1

You have three pieces and 2 breakpoints!

Given the following functions

$$f(x) = \begin{cases} -2x - 1, & x < -1 \\ x^2, & -1 < x < 1 \\ 1, & x \geq 1 \end{cases}$$

(a) Sketch the graph of $f(x)$.



(b) Find the domain and range of $f(x)$.

Domain of $f(x) = \mathbb{R} \setminus \{-1\} = (-\infty, -1) \cup (-1, \infty)$

Range of $f(x) = [0, \infty)$