name : _____

section : 105

GSI : Charles Wang

(2 pts) Circle True or False. (+1 for correct, 0 for blank, -1 for incorrect)

1. (True False) $\{(x, y) : x^2 + y^2 = 1, x \in \mathbb{R}, y \in \mathbb{R}\}$ is a function

2. (True False) -1 is a natural number.

(10 pts) For the following, you must **justify** your answer to receive credit. (Showing your work counts as justification.)

3. Given $f(x) = \sqrt{1 - x^2}$ and $g(x) = \sqrt{1 + x}$, compute and give the domain of each of the following:

   (a) $(f + g)(x)$
   (b) $(f \cdot g)(x)$