

name : _____

section : 105

GSI : Charles Wang

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

1. (True False) The horizontal line test determines whether a function is surjective.
2. (True False) If $f : \mathbb{R} \rightarrow \mathbb{R}$ is an invertible function, then the graph of f^{-1} is obtained by reflecting the graph of f over the line $y = x$.

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

3. Compute the following limits, or (briefly) explain why they do not exist:

(a) $\lim_{x \rightarrow 2} \frac{x-2}{\sqrt{x}-\sqrt{2}}$

(b) $\lim_{x \rightarrow \infty} \tan x$