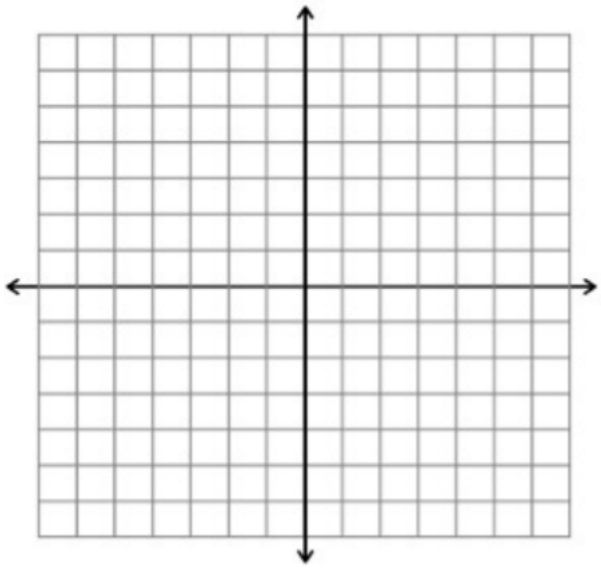
Math 1150 - Autumn 2017 Name: _____

Quiz 1 - In Class (10 pts) Recitation Time: _____

SHOW ALL WORK!!! Unsupported answers might not receive full credit. Furthermore, please give me EXACT answers. There is a Problem 3 on the back. Please make sure you do it.

Problem 1 [4 pts] Consider the function s given by $s(x) = \begin{cases} -x^2 - 1 & \text{for } x \leq 1 \\ 3x & \text{for } x > 1 \end{cases}$.

(a). [2 pts] Graph s



(b). [2 pts] Use interval notation to write the intervals over which f is increasing, decreasing, or constant.

Problem 2 [4 pts] Consider the functions $s(x) = \frac{x-3}{x^2-25}$ and $t(x) = \frac{x-5}{x-3}$.

(a). [2 pts] Find $(s \cdot t)(x)$ and state its formula in simplified form.

(b). [2 pts] Write the domain for $(s \cdot t)$ in interval notation.

Problem 2 [2 pts] Find the average rate of change of the function r defined by $r(x) = \sqrt{x+4}$