

## 231 Quiz 2

January 27, 2011

Name \_\_\_\_\_

By printing my name I pledge to uphold the Honor Code.

*Work individually. You may use your Notebooks but no loose papers, printouts, photocopies, books, calculators, cell phones, or other resources.*

True/False party!

- T F** Suppose  $f(x) = 3x + 1$ . For all  $a, b \in \mathbb{R}$ , if  $a < b$  then  $f(a) < f(b)$ .
- T F** Suppose  $f(x) = 3x + 1$ . For all  $a, b \in \mathbb{R}$ , if  $f(a) = f(b)$  then  $a = b$ .
- T F** Suppose  $f(x) = x^2$ . For all  $a, b \in \mathbb{R}$ , if  $a < b$  then  $f(a) < f(b)$ .
- T F** Suppose  $f(x) = x^2$ . For all  $a, b \in \mathbb{R}$ , if  $f(a) = f(b)$  then  $a = b$ .
- T F** For all  $x \in \mathbb{R}$ , there exists some  $y \in \mathbb{R}$  such that  $x = y^2$ .
- T F** For all  $y \in \mathbb{R}$ , there exists some  $x \in \mathbb{R}$  such that  $x = y^2$ .
- T F** If  $f(x)$  has a global max at  $x = c$  then  $f(c) \geq f(x)$  for all  $x \in \text{dom}(f(x))$ .
- T F** Every local maximum of  $f(x)$  is also a global maximum of  $f(x)$ .
- T F** Every constant function is a linear function.
- T F** Every proportional function is a linear function.
- T F** Every linear function is a power function.
- T F** Every power function is a polynomial function.
- T F** Every polynomial function is a rational function.
- T F** A function can have different average rates of change on different intervals.
- T F** The converse of an implication statement is also an implication statement.
- T F** When  $A$  is true and  $B$  is false, then the implication  $A \Rightarrow B$  is false.
- T F** When  $A$  is false and  $B$  is true, then the implication  $A \Rightarrow B$  is false.
- T F** If  $g(x)$  is a function then we can write  $f(x) = |g(x)|$  as a piecewise function.
- T F** For all real numbers  $x$ , the quantity  $|x|$  is equal to  $\sqrt{x^2}$ .
- T F** I would like a free point for this problem.