

MAT 136 (Calculus I), Prof. Jim Swift
Worksheet 4 = Quiz 1, Linear and Piecewise Defined Functions

Name: _____

There are 2 problems, one on each side of the page. The problems have equal weight.

You may use your notes, and work with other people, but you may not use a calculator, etc.

The quiz is worth 5 class points. Missing the quiz gets 0 points, and taking the quiz in class (or with a make-up for an excused absence) gets at least 1 point.

1. A linear function f satisfies $f(5) = 4$ and $f(6) = 7$. Fill in the blanks with numbers.

(a) Write a formula for $f(x)$ using the point-slope form: $f(x) = \underline{\hspace{1cm}}(x - 5) + \underline{\hspace{1cm}}$

(b) Write the formula for $f(x)$ using the slope-intercept form: $f(x) = \underline{\hspace{1cm}}x + \underline{\hspace{1cm}}$.

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2. Consider the piecewise defined function

$$f(x) = \begin{cases} 1 + x & \text{if } x \leq 0 \\ x^2 & \text{if } x > 0 \end{cases}$$

Fill in the blanks: $f(-1) = \underline{\quad}$, $f(0) = \underline{\quad}$, $f(1) = \underline{\quad}$.

Sketch graph $y = f(x)$ on the interval $-1 \leq x \leq 1$. As usual, draw a closed dot for a point on the graph, and an open dot for a point that is not on the graph.

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