Last name:(blockletters)_____ **First/Given Name:**_____

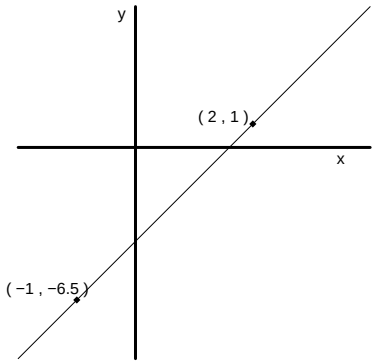
Student Number:_____

MATH 121 - TEST 1 (Based on Assignments 1, 2, and 3)
Version 2A Fall 2010

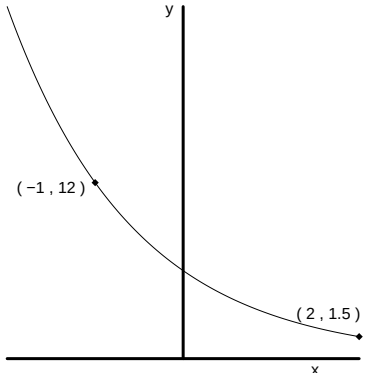
This test consists of 3 questions to be answered in the space provided.
Show all work and give explanations when needed.

1. (a) Give the formula for the **linear** function shown in Graph A.

   (b) Give the formula for the **exponential** function shown in Graph B.



A



B

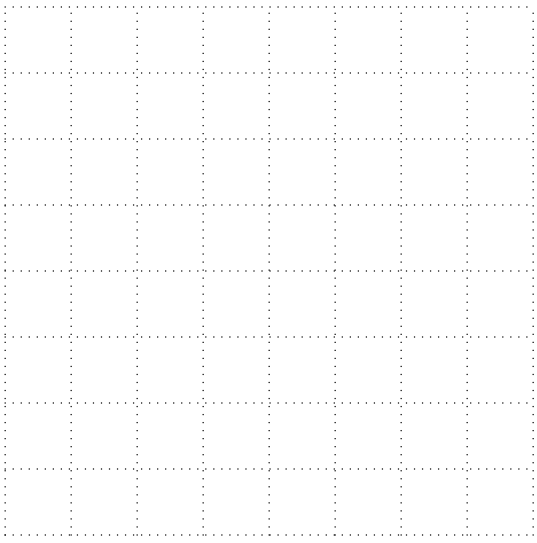
Last name:(blockletters)_____ **First/Given Name:**_____

Test 1, Version 2A

2. (a) Find all values of k that make the following function continuous on any interval.

$$f(x) = \begin{cases} kx^2 & x \leq 2 \\ 3x & x > 2 \end{cases}$$

(b) Sketch the graph of $f(x)$ on the axes below, using one of the k value(s) found in part (a), on the interval $0 \leq x \leq 4$.



Last name:(blockletters)_____ **First/Given Name:**_____

Test 1, Version 2A

3. Evaluate the following derivatives. You do not need to simplify the result.

   (a) $\dfrac{d}{dx}\left(x^4 + 8 \cdot 10^x\right)$

   (b) $\dfrac{d}{dx}\sin(4x^2)$

   (c) $\dfrac{d}{dx}\dfrac{e^{9x}}{\sqrt[3]{x}}$