

MTH 1210, FALL 2013
DR. GRAHAM-SQUIRE

SECTION 4.3/4.4: IN CLASS ACTIVITY

1. NAMES

2. INSTRUCTIONS

Read the problem given below, then work on it with the other members of your group. You should give a complete answer with all of your work shown for each question. It is fine for different people to work on different parts of the question, but you should check each other's work since everyone in the group will receive the same grade for the assignment. If you have any questions, ask the other members of your group first. If all of you are stuck, everyone in the group must raise their hand in order to get help from the professor. Attach this as a cover sheet to the work you turn in.

3. EXPLANATION

In section 4.5, we will look at ways to solve equations involving exponentials and logarithms. In this in-class activity, you will solve some basic equations involving logarithmic and exponential expressions by using the definition of logarithms and exponentials, as well as the change of base formula and a calculator.

In general, you will follow these steps: (1) Isolate the exponential or logarithmic expression. (2) Rewrite the expression into the other form (if it is a logarithm, rewrite the expression as an exponential, and vice-versa). (3) Solve the equation (you may need to use the change of base formula if your logarithm base is not e or 10).

Exercise 1. Solve the following equations. Round your answer to the nearest 0.01.

(a) $\ln x = 5$

(b) $e^x = 17$

(c) $\log_4(2 - x) = 3$

(d) $2000 = 1000e^{0.06x}$ (Hint: you need to move the 1000 to the other side before you rewrite it into logarithmic form)

(e) $4(1 + 8^{5x}) = 49$