

Test #1 will be given on Thursday February 12

It will include material from Sections 1.1, 1.3 – 1.6, and 2.1 – 2.2.

Be sure to bring your calculator to the test. If you forget your calculator or if your calculator is not working, go to the Math/Science Center in Room 02 Macklin Tower to get a short-term calculator loan.

IMPORTANT REMINDERS

MAKEUP POLICY: If you know in advance that you have to miss a quiz or test, you can make arrangements with me to take the quiz or test **before** it is given in class. Otherwise, no makeup quizzes will be given. If you miss an hour test, it may be made up only if you

- Do not have more than one unexcused absence during the time period covered on the test.
- Contact me on or before the scheduled test date.
- Can prove that you have a legitimate excuse.
- Have completed the WebAssign homework on the relevant material.

If you do not meet these conditions, you will not be permitted to take a makeup test and the percentage equivalent of your final exam grade will be substituted for the grade of the missed test. No student will be permitted to take more than one makeup test.

ACADEMIC HONESTY: All students are expected to do their own work on quizzes and tests. Students are expected to observe the following rules during any test or quiz.

- Students may not use or even hold a cell phone, ipod, or any other electronic device (other than a calculator). **Any student who is found to have such a device turned on during a test or quiz will receive a grade of zero on that test or quiz.**
 - Students may not speak to or share materials with other students.
 - Students should have all materials ready at the beginning of the quiz or test.
 - Students should remain in the room during the entire test or quiz.
- Appropriate penalties will be imposed for breaches of academic honesty.

If you have documentation showing that you require extended time for tests, you must discuss this with me at least two days before the scheduled test date.

To be prepared for this test, you should be able to

- Use function notation to evaluate functions algebraically and graphically.
- Interpret function notation or graphs in the context of a situation.
- Find a simplified difference quotient.
- Translate the verbal statement of a problem into an algebraic model.
- Find the slope and equation of a line.
- Interpret slope as average rate of change.
- Use two data points to find a linear mathematical model for a set of data and use the model to make estimates.
- Convert expressions involving radical notation to rational exponents and vice-versa.
- Simplify expressions involving rational exponents.

- Write a function for average cost and compute average cost for a given input value.
- Sketch the graph of an exponential function.
- Simplify exponential and logarithmic expressions.
- Compute an average rate of change for a function given symbolically, graphically, or in a table.
- Compute limits numerically, graphically, and algebraically.
- Find derivatives using the limit definition of the derivative.
- Solve applications of derivatives involving tangent lines and rates of change.
- Interpret derivative values.
- Sketch the graph of a derivative if the graph of a function is given.
- Use the graph of the derivative to determine where a function is increasing, where it is decreasing, where it has a local maximum, and where it has a local minimum.
- Use the signs of the first and second derivatives to sketch a piece of a curve.

Review Problems

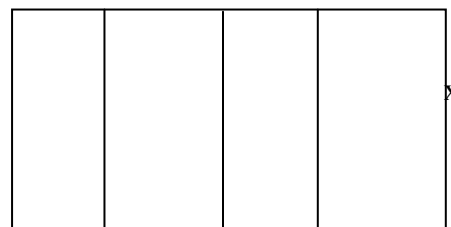
Chapter 1 Exercises (pp. 73 – 75): 1, 9, 23, 25, 26, 28,

Chapter 2 Concept Check (p. 129): 1, 2, 5

Chapter 2 Exercises (pp. 129 – 130): 1, 3, 5, 7, 9, 11, 15, 17

Additional Review Problems:

1. A farmer wants to enclose a rectangular area and then divide it into four smaller rectangular regions by putting up fencing parallel to one side of the rectangle. The total amount of fencing available is 500 feet. An illustration is shown at the right. Express the total area of the enclosed region as a function of x and simplify your answer.



2. The graph of the function f is shown.
- List any value or values of x at which f is not continuous.
 - List any value or values of x at which f is not differentiable.
 - Can a function be continuous at $x = a$ but not differentiable at $x = a$?
 - Can a function be differentiable at $x = a$ but not continuous at $x = a$?

