Name: _____

1. Class notes for this week: This week we have covered Sections 1.8, 2.1, and 2.2. Next week we will cover Sections 2.3, 2.4, and part of 2.5.

2. A laboratory is growing bacteria for an experiment. The number of bacteria after t hours of the experiment is $f(t)$.
   (a) (1 point) What are the units on $f'(t)$? Explain in a sentence what this number means.
   (b) (1 point) Suppose there is an unlimited amount of space and nutrients for the bacteria. Would you expect $f'(5)$ or $f'(10)$ to be larger?

Question 3 is on the back

3. Consider the function $f(x) = x^3 - 15x^2 + 71x - 103$.

   (a) (1 point) What is the largest number of roots this function could have? (This is a question from algebra, not calculus.)

   (b) (2 points) Compute $f(2)$, $f(3)$, $f(5)$, $f(6)$, and $f(7)$, and use this information to identify intervals in which the roots of the $f(x)$ are contained. Explain your reasoning. Be sure you check that the hypotheses of any theorems you use are satisfied!