Chapter 1

pages 103–111 Use your calculator to find the best fitting regression curve (linear or exponential - you decide which is more appropriate) for a given set of data. Obtain a graph which shows both the data and the regression curve. Make predictions based upon the formula for your regression curve. For exponential functions, be sure that you can determine the percent by which a quantity changes during any given time period. Look at #1, 2, 3, 6, 8 from this section.

Chapter 2

2.1 Given some function $P = f(t)$, you should be able to do the following:

1. Compute total change in $P$ between $t = a$ and $t = b$.
2. Compute the average rate of change of $P$ between $t = a$ and $t = b$.
3. Compute the (instantaneous) rate of change of $P$ at some point $t = a$.
4. From a graph, determine where the slope is positive, negative, or zero. Also determine where you have the greatest and least slopes.

Be sure to include correct units for (1)–(3) above. Look at #1, 3, 5, 6, 7, 10, 11, 12, 13 from section 2.1.

2.2 Given a function $y = f(x)$, $f'(a)$ denotes the derivative of $f(x)$ at the point $x = a$. All three of the following mean the exact same thing.

- the derivative of $f(x)$ at $x = a$
- the rate of change of $f(x)$ at $x = a$
- the slope of the graph of $f(x)$ at $x = a$

Since we’ve already dealt with slope and rate of change in 2.1, most of the problems in 2.2 are very similar. They simply use the new notation $f'(a)$. This section also talks about the graphical interpretation of total change, average rate of change, and rate of change at a point. You may be given the graph of $f(x)$ along with two points $x = a$ and $x = b$. You should understand the graphical meaning of $f(b)$, $f(a)$, $b - a$, $f(b) - f(a)$, $\frac{f(b) - f(a)}{b - a}$, and $f'(a)$. Look at #1, 2, 3, 6, 9, 11, 16 from section 2.2.

Notes

- You should bring your own calculator and be able to use its graphing and table features effectively. For graphing functions, you will have to decide the appropriate [WINDOW]. You should also be proficient at using the built-in features found under [2nd] – [CALC] for the TI-82 and TI-83. For the TI-85 and TI-86, use [RANGE] to enter the appropriate viewing window, and look for the built-in features under [GRAPH] – [MORE] – [MATH].

- There will be a review session Tuesday, October 2nd beginning at 8:00 PM in LeConte 412.