Week 9 Pre-Calc Assignment:

Day 1: pp. 223-24 #1-55 odd
Day 2: pp. 223-24 #57-85 odd, 91-95 odd, 99-105 odd
Day 3: pp. 232-35 #1-67 odd
Day 4: pp. 232-35 #69-119 odd, 129-139 odd
Day 5: pp. 250-53 #1-15 odd, 23-27 odd, 31-79 odd, 83-101 odd, 107-119 odd

Notes on Assignment:

Pages 223-24:

#1-7: Use the change-of-base formula, but do not actually put it into your calculator.

#9-15 Use the change-of-base formula, and then put it into your calculator to get your final answer.

#59-73: For many of these, you will need to expand, condense, or manipulate the expressions so that the base of the log equals the base of the argument. If you can do this, then you can apply the Properties of Logarithms on page 210 to finish.

#75: Write this as a log with base 2, using the change-of-base formula. Then change the arguments to powers of 2 and apply the Properties of Logarithms on page 210.

#75: Hint: Write lo $\log_5\left(\frac{1}{250}\right)$ as $\log_5\left(\frac{1}{125}\cdot\frac{1}{2}\right)$ and use the product rule to expand it.

#79: Use the product rule.

#81d: Put 75 in for f(t) and solve for t. At some point you will need to write the equation in exponential form to finish solving.

#81e: Hint: Use Property of Logarithm #3 on page 220.

#81f: Use your calculator to help sketch the graph.

#91: Write this as $f(x)=\frac{\log x}{\log 2}$ and $f(x)=\frac{\ln x}{\ln 2}$ and graph both.

#93-5: Do the same as you did for #91.

Pages 232-235:

#69-75: Graph the right and left sides separately and use the [CALC] [intersect] function on your calculator to solve for x.

#109-11: Use the continuous compounding formula $A = Pe^{rt}$.

#115: When you graph this, use the following window settings: 0<x<1500, scale = 100, and 0<y<10, scale = 1.

#117b: The average would happen at 50%. Solve each equation for m(x)=50 and f(x)=50.

#119a: Enter the equation into [y=] and then make a table or use the [CALC] [value] function.

#119b: Do a STATPLOT for the actual data. Use ZoomStat to get the window set. If you entered the equation for part (a) above, then that graph should show up as well.

#119c: Put 30 in for y and solve for x. The easiest way to solve this, since you already have the equation graphed, is to also graph y=30 and see where the graphs intersect. (Use the [CALC] [intersect] function.) Remember to turn off your stat plot after doing part (b).

#119d: Look at the value of x when y = 23. (Either graph y=23 and find the intersection as you did for part (c), or use the table and scroll to get an approximate value of x when y = 23. Is the value of x (which represents the size of the crumple zone) realistic?

Pages 250-53:

#1-3: Use your calculator.

#15-21: Use your calculator for the table, then sketch the graph. Draw any asymptotes as dotted lines.

#27-29: Use your calculator for the table, then sketch the graph. Draw any asymptotes as dotted lines.

#31: Use the formulas on page 204.

#35b: Solve $2P=Pe^{.0875t}$ to find the general doubling time.

#43-47: For the domain, remember that the argument (what you are taking the log of) must be > 0. For the x-intercept, let y = 0 and solve. (Hint: Write the logarithm in

exponential form.) For the vertical asymptote, look at the value of x where the argument equals 0.

#55-57: For the domain, remember that the argument (what you are taking the log of) must be > 0. For the x-intercept, let y = 0 and solve. (Hint: Write the logarithm in exponential form.) For the x-asymptote, look at the value of x where the argument equals 0.

#123: Use $A = Pe^{rt}$.