Newberger, College Algebra 112-10, Spring 2005
Homework: Exponential Functions.
Due Tuesday, April 26

Make your homework, neat, organized and easy to read.

I. Read Section 5.1.
II. On page 392, do problems #9-12. Sketch the graphs in your homework.
III. On page 392, do problems 13-18. For each part, show that your choice is correct using the point given on the graph. For example, if the function were $f(x) = 2^x$ and the point that was labelled on the graph I chose was (3,8), I would say, "The point (3,8) is on the graph of $f(x) = 2^x$, since $f(3) = 2^3 = 8$."
IV. Read the instructions for problems 19-32 on page 393.
   A. About problem #20.
      i. Write a sentence saying what you would do to the graph of $g(x) = 10^x$ to get the graph of $f(x) = 10^{-x}$.
      ii. Graph both functions on the same axes.
      iii. On your graph, label the y-intercept of these graphs with its coordinates.
      iv. What are the domain and range of the functions $g(x) = 10^x$ and $f(x) = 10^{-x}$.
   B. About problem #22.
      i. Write a sentence saying what you would do to the graph of $g(x) = 2^x$ to get the graph of $f(x) = 2^{x-3}$.
      ii. Graph both functions on the same axes.
      iii. On your graph, label each of the y-intercepts of these two graphs with its coordinates. (You can find the coordinates of the y-intercept of the shifted function $f(x)$ by plugging in $x = 0$).
      iv. What are the domain and range of $g(x) = 2^x$ and $f(x) = 2^{x-3}$?
   C. About problem #24.
      i. Write a sentence saying what you would do to the graph of $g(x) = 3^x$ to get the graph of $f(x) = 6 - 3^x$. Here's a hint: rewrite $6 - 3^x$ as $-3^x + 6$.
      ii. Graph both functions on the same axes.
      iii. On your graph, label the y-intercepts of the two functions with their coordinates.
      iv. What are the domain and range of $g(x) = 3^x$ and $f(x) = 6 - 3^x$?