Math 1124: Homework 3
Due: Friday, September 14th

1) A baby blue whale weighs 303.89 pounds 3.5 months after birth and 476.78 pounds on its first birthday. Assuming that the weight of the whale grows at a constant rate,

(a) Make a graph showing the relationship of the weight to the age of the whale. Put the age (in months) on the x-axis, and the weight on the y-axis.

(b) Connecting the dots from the first part, you should get a line. What is the slope of the line and what does it represent in the story and what is the unit for the slope?

(c) Without finding the whale's birth weight, predict (using arithmetic!) how much the whale weighs 6.78 months after birth.

(d) Without finding the whale's birth weight, predict (using arithmetic!) when will the whale weigh 1000 pounds.

(e) Write an equation describing the relationship between the weight and the age of the whale. Again, do this without finding the whale's birth weight.

(f) Find the y-intercept of the line. What does it represent in the story?

(g) Find the x-intercept of the line. What does it represent in the story?

2) Financial planners make a big deal about investing money early in life for retirement.

(a) Suppose that you have a choice in how to make deposits in an account that earns 8% interest compounded annually. You can either deposit \$1000 per year into the account beginning on January 1, 2013 or you can deposit \$3000 per year in the account beginning on January 1, 2027. Which account will have more money in it on January 2, 2047?

(b) You wish to pay off a \$500000 loan in 15 years at an annual interest rate of 7%. Assuming you wait 1 year to make the first payment, what should your annual payments be? In the first payment, how much of it went toward interest and how much went toward paying the \$500000?