

Lab Assignment #9

This lab is due at 12:30 PM on Wednesday, 10/2 and is worth 10 points. This part may be done individually, or in a group of 2, 3, or 4 people.

- 1) The average price of a pair of sneakers at Big 5 was \$28 in 2000 and has gone up 3% each year.
 - a) Find an exponential model for the price n years after 2000.
 - b) Find the price in 2010.
 - c) Find the price in 2030.
 - d) When will sneakers cost \$45?
 - e) When will sneakers cost \$105?

- 2) The number of bacteria in a dish increases 16.7% per day, starting with 3000 bacteria.
- a) Find an exponential model for the number after n days.
 - b) Find the number after 7 days.
 - c) Find the number after 30 days.
 - d) When will there be 10,000 bacteria?
 - e) When will there be 10,000,000 bacteria?

3) Every hour spent filtering a fish tank removes 32% of the tank dirt. Using 100 as the starting values, ...

- a) Find an exponential model for the percent of tank dirt remaining after n hours.
- b) What percent remains after 6 hours?
- c) What percent remains after 16 hours?
- d) How many hours are required so that only 10% of tank dirt remains?
- e) How much hours are required to remove 99% of tank dirt? (Careful!)
- f) How much hours are required to remove 100% of tank dirt?