Homework 7

Due Wednesday, August 17

Note: Want to use your one late homework pass to turn in homework 6 or 7 late? If so, the deadline is Thursday, August 18, in quiz section.

Worksheet 20: Do the version of 9 below.
Worksheet 21: Do 13 in the book and the version of 12 below.
Worksheet 22: Do 3 and 5 from the book.

If you have any questions, just drop in at office hours. Office hours are as usual this week (complete list on website). Next week, office hours will be slightly different; check the website this weekend.

Worksheet #20

→ 9 A bacteria colony increases its population at the rate of 50% every 30 minutes. *Note: each part is separate— the numbers from part (b), for instance, don't apply to part (c). But the growth rate (50% every 30 minutes) is the same for all parts.*

a) What is the population 5 hours from now of a colony that has 2 million bacteria now?

b) What would the population have to be now, if you want the population to be 15 million 5 hours and 45 minutes from now?

c) What is the change in population over the next 4 hours if the colony has 5 million bacteria now?

d) What is the percentage change in the population over any 3 hour period?

e) What is the proportionate change in the population over any 4 hour period?

f) How many times larger is the population in 3.5 hours than it is now? (i.e., is it 3 times larger, 15 times larger, . . .)

Worksheet #21

→ 12 a) What is the value of $10,000, 4 years from now, if it is placed in an account with a nominal annual rate of 11% and compounded monthly?

b) Money is compounded continuously at 5% per year. By what factor is $20,000 multiplied after 3 years?

c) Interest is compounded monthly in an account that has an annual rate of 1%. What is the percentage change of the balance over 2.25 years?

d) An account bears interest of 2% annually, compounded quarterly. What is the present value of a dollar 2 years from now?