

## Math 107

### Homework #3

The following table shows the total number of home runs scored by major league baseball players in the given year

Year	Home Runs
2001	5458
2002	5059
2003	5207
2004	5451
2005	5017
2006	5386
2007	4957
2008	4878
2009	5042
2010	4613

1. Find the percentage change from
  - a. 2001 to 2002
  - b. 2001 to 2005
  - c. 2005 to 2008
  - d. 2008 to 2010
2. Find the average rate of growth from
  - a. 2001 to 2002
  - b. 2001 to 2005
  - c. 2005 to 2008
  - d. 2008 to 2010
3. Extrapolate using the data from 2009 and 2010 to get the number of home runs hit in 2012. Compare with the actual result of 4954. Why is your result different?

The following table shows enrollment in French at institutions of higher education (in thousands)

Year	1983	1986	1990	1995	1998
Enrollment	128.2	121.0	113.3	96.3	89.0

4. Find the percentage change from 1983 to 1998 and also find the percentage change from 1990 to 1995
5. Find the average rate of change from 1990 to 1995. Use this result to interpolate and find the estimated value for 1993
6. Extrapolate to find the value for 2015. Do you believe this result? Why or why not?

7. Between 2000 and 2010 the percentage of U.S. households that had cordless phones increased by 13.7% to 91%. What was the percentage of households that had cordless phones in 2000?  
Check your answer
8. If you receive a 5% pay raise and then a 5% pay cut is your salary the same? Why or why not?  
Demonstrate your answer using actual values
9. The number of students taking Calculus is increasing! Suppose at one university the number of students taking Calculus in 2010 was 2546 and it increased to 2890 in 2015. If this trend continues how many students would you expect to take Calculus in 2016? How many in 2020?
10. You decide to take Mr. Wildman to lunch but only have \$30. You know he will insist on you leaving a 15% tip and the tax in Spokane is 8.7% How much can you spend on food and drink. Remember that tip is calculated on the after tax total