

1. **Simple Interest** Suppose Liz borrows \$1000 and agrees to pay it back in 3 years with 5% simple interest added each year.

(a) How much **interest** will she pay? In addition to your answer, write down your computation, including the decimal values you would plug into a calculator.

(b) How much will she owe **in total** at the end of three years? Write down the computation and the answer.

2. **Annual Interest Rate (APR)** Annual interest rates are pro-rated by time.

(a) Definition: An APR of $r\%$ paid n times year means

(b) So an APR of 5% paid quarterly means

3. Determine n for each word below.

word:	annually	semi-annually	quarterly	monthly	weekly	daily
n times per year						

Compound Interest

4. What is **compound** interest and how is it different from **Simple** Interest?

5. Suppose \$1000 will be invested in an account that accrues **compound** interest at an APR of 3% compounded monthly. We will set up a spreadsheet to model this account assuming no other deposits or withdrawals.
 - (a) Open a new spreadsheet and type column headers in cells A1, B1, C1, D1, E1, F1. (See below.)
 - (b) In row 2, type the variables for reference. (hint: A2 is r .)
 - (c) In row 3, enter the **start** values for this specific problem. Assume time t is in years.
 - (d) In rows 4 and 5, enter the values/formulas and the end of 1 month and 2 months.
 - (e) Use the pull down feature to determine the values in the account at the end of 2 years.

	A	B	C	D	E	F
1	Interest Rate	Times per Year	Principal	Time Elapsed	Interest	Total
2	r					
3						
4						
5						

6. Write out the month-by-month computations and look for a pattern.

7. With a principal of P dollars earning $r\%$ interest compounded n times per year for t years will result in a total of A dollars where