

**Math 107 Quiz #4**  
**February 1, 2011**

Name: \_\_\_\_\_

Show all work and answers on a separate paper stapled to this sheet. Simplify your answers as much as possible.

1. Suppose that you want to buy a new car.
  - (a) (3 pts.) If you can afford \$300 each month for a 60-month new car loan with 4.5% APR, then how much can you borrow? (i.e. What loan amount can you get with these payments?)
  - (b) (2 pts.) If the car that you want costs \$25,000, are the loan payments of \$400 from part (a) sufficient to buy it? If not, how much of an additional down payment do you need in order to afford the car?
  
2. Here is some information about Bob for his 2010 taxes.  
Wages: \$64,000    Interest Income: \$1,300    Exemption Amount: \$3650    Standard Deduction: \$5700  
Tax-deferred retirement contributions: \$5,000
  - (a) (3 pts.) What is Bob's gross income and his adjusted gross income?
  - (b) (2 pts.) Assuming Bob is not going to itemize his deduction, what is Bob's taxable income?
  
3. In 2006, a poll was conducted to see what percentage of Seattle residents wanted a new viaduct, a new tunnel, neither, or were undecided about it. For the poll, 400 registered voters were randomly selected.
  - (a) (2 pts.) Describe the population, sample, population parameters, and sample statistics of this poll.
  - (b) (2 pts.) It was found that 47% of the sample wanted a new viaduct. If the margin of error was 5%, find the confidence interval for those that want a new viaduct.
  
4. (1 pt.) Suppose that when sampling sodas in a factory, every 1000th soda is tested for quality. Which sampling method was used: Simple Random, Systematic, Convenience, or Stratified?