Midterm I: Some problems for review

The exam will be taken in class (SCB 304) on Friday 10/04. You will bring your own laptop and pocket calculator (of any kind). You are not allowed to use any app on your laptop, even a calculator app. Your web browser should occupy the full screen at all time. Phones and notecard are not allowed. The instructor will provide scratched papers for you. When you are seated, go to Canvas and click on Midterm I in Week 5 module. You will be directed to MyLab Math, which will ask you for an access code. The instructor will give you the access code.

The textbook sections to be covered are 3A, 3B, 3C, 4A, 4B, 4C, 4D. You should review the homework problems, worksheets, quizzes, examples given in the lectures. It is always a good idea to study for the exam with someone. Some problems to practice:

1) Convert the number 1.212212212212… into a fraction of whole numbers.

2) From 08/2021 to 08/2023, the unemployment rate in the US rose by 0.3 percentage point to 3.8 percent. What was the unemployment rate in 08/2021?

3) From 2010 to 2018, the 4-graduation rate of University of Hawaii-Manoa has risen by 101.1% to 35.2%. What was the 4-graduation rate in 2010?

4) Round the following numbers to the nearest hundred, ten, tenth, and hundredth.

   a)   1562.1651

   b)   -265.1515

5) If the true length of a table is 123 centimeters but the measurement tells 121 centimeters. What is the absolute error? What is the relative error (percentage)?

6) Round the fraction 45/1241

      a) to 4 decimal places

      b) using 4 significant digits

7) Melinda spends an average of $35 per week on gasoline and $50 every three months on a daily newspaper. Find the average *monthly* expense. Assume that there are 4 weeks in each month.

8) You deposit $800 in an account with an annual interest rate of 5%. Calculate the amount of money you will have in each account after 5 years, assuming that the account earns simple interest.

9) A bank offers an APR of 3.2% compounded monthly. Find the annual percentage yield (to the nearest 0.01%).

10) A bank offers an APR of 3.2% compounded continuously. You deposit $2000 in your saving account. Find the balance in 40 months. Find the APY and total return.

11) If your investment plan pays an APR of 6% and you want to have $1 million when you retire in 30 years, how much should you deposit monthly? Find your total deposit.

12) Suppose you take a car loan of $20,000 with a fixed APR of 3.5% for 5 years.
a) Find the monthly payment.

b) How much will you pay over the lifetime of the loan?

c) Of the total amount paid, what percentage is paid toward the principal? What percentage toward interest?

d) Make a table showing the amount of monthly payment that goes toward principal and interest at the end of each month for the first three months of the loan.