Name: ________________________________

**Short Answer:** This section is short answer. You should be able to answer these questions without doing any work (other than possibly addition or subtraction). You don't need to show work for these questions.

1. (1 point) One of the following is an annuity, the other is not an annuity. **Circle the annuity.**
   - Macklemore is trying to save some money. Every three weeks he adds $20 to his savings account.
   - Ryan Lewis is trying to save money. Every week he takes his spare change and deposits it into his savings account.

2. (2 points) Jack Black and Kyle Gass are each looking to take out $10,000 home improvement loans, and both qualify for 5% interest. Jack will take out a 3 year loan, and Kyle will take out a 5 year loan. **Circle the best answer in each part, remember you should be able to answer without doing calculations.**
   (a) Who will have higher monthly payments? (Jack or Kyle)
   (b) Who will pay more in interest over the life of the loan? (Jack or Kyle)

**Long Answer:** The questions in this section require you to show work.

3. (7 points) John, Ringo, Paul and George are partners in the Abbey Road Hammer Company. Last quarter their profits were $25,023 and they agree to divide this amongst themselves.
   (a) If each partner is entitled to an equal share, how much will each receive?
   (b) If instead of being entitled to an equal share, John is entitled to 4 shares, Paul is entitled to 3 shares, and George and Ringo are each entitled to 2 shares, how much will each partner receive this quarter?
   (c) **(Bonus 1pt)** Who would prefer the profits were divided equally?

4. (9 points) In 1992 Billy Ray Cyrus and his then-wife Tish realized they were expecting a baby girl (who they would name Miley). They wanted to start a savings account for little Miley’s college, so Billy Ray went immediately (that same day) to open a savings account and deposit $400. Assume that the account earned 2.18\% interest, and that Billy Ray made $400 deposits into this account every quarter for 18 years (till 2010). How much would the account be worth in 2010?

5. (10 points) Mr. Bronson wants to buy a Brand New Car. He’s saved up $10,000 for a downpayment (from the release of his album Mr. Wonderful) and his accountant has determined that he can afford monthly payments as high as $550 a month. If Mr. Bronson qualifies for a 4-year loan at 4\frac{1}{4}\% interest, what’s the most expensive car Mr. Bronson can afford?

\(^1\)1992 was before Billy Ray made it big with hits like “Achy Breaky Heart,” so $400 a quarter might have been all he could afford.
6. (10 points) The Barenaked Ladies released the song “If I had $1,000,000” in 1993 (22 years ago). Suppose rather than simply dreaming and singing about the million dollars, one of their members actually tried to save $1,000,000 in 22 years by making payments every 2 weeks into an investment that earns 8.1% interest.

   (a) How much does each payment need to be?

   (b) How much in interest will the musician earn from this account?

7. (7 points) The members of Spinal Tap took out a loan last year for the newest, most state-of-the-art Amp (this one goes up to 12). They have 9 monthly payments of $161.70 remaining. If the interest rate on their loan is 4.9%,

   (a) what is the remaining balance on this loan?

   (b) (Bonus 1 pt) If Spinal Tap just got a $1444.00 royalty check, can they pay off their Amp loan today? Explain.

8. (4 points) Kim Kardashian bought Kanye West a Lamborghini, we'll assume she has 14 monthly payments of $9013 left at 3.9% interest and the remaining balance of $123,158.90 on the car loan.

   (a) How much will Kim (and Kayne) spend paying off the $123,158.90 remaining balance on this car loan?

   (b) Kanye and Kim are also rumored to be buying the $3,000,000 house next to the one they already own. If they decide to consolidate the Lamborghini car loan with the mortgage for their new house, how much will they need to borrow with their new mortgage?

9. (6 points) The Deere & Company stock paid out a quarterly dividend of $0.60 per share in February, 2015. The current selling price of the Deere & Co. stock is $88.52 (April 7, 2015). The CARG of Deere & Co. stock has been about 2.65% (over the past 3 years). Since Kenny Chesney (and his friends and family) “ain’t into cars or pickup trucks,” we'll assume Kenny bought some Deere & Co. stock 3 years ago.

   (a) Find the current dividend yield of this stock.

   (b) Approximately what total rate of return did Kenny earn on this stock?

      You may assume the dividend yield hasn't changed over these 3 years.

10. (8 points) Dr. Dre is always talking about how great Beats are. Unfortunately not everyone is careful with spelling, and one of the Doctor’s financial advisors bought stock in American Crystal Sugar Co, an agricultural cooperative specializing in beet sugar and other sugar products\(^2\) to try and get on the Doctor’s good side.
Assume the stock was purchased back in October 2013 (1.5 years ago), and was selling for $2000.00 a share. Currently, (April 2015) the stock is selling for $2,550.00. Assume the stock hasn’t undergone any splits.

(a) What rate of return (Compound Annual Growth Rate) does this stock’s growth represent?
(b) If we assume that the stock continues to grow at the same rate, what will we expect the stock to be worth in 2 years (April 2017)?
(c) What can we say for certain about the value of this stock in 2 years?

11. (12 points) Don McLean bought a $1000 par-value General Motors Bond\(^3\) (GM is the company that manufactures Chevy’s). The bonds have a 5.2% coupon rate with semiannual payments and a maturity date of April 1, 2045. Currently (March 2015) the bonds are selling at $1077.70.

(a) How much is each interest payment that Don will receive from owning this bond?
(b) How much will Don receive at maturity?
(c) What is the current yield of this bond?
(d) Is this bond selling at a discount, at par, or at a premium?

**BONUS: You May Only Attempt This Question If You Have Finished the Rest of the Test!**

(a) Miss. Lorde has an eccentric shopping list. Some of her purchases were bought in her home country of New Zealand (where the sales tax rate is 15% on all purchases). And some of her purchases were made in California, where the sales tax rate is 7.5%.

If Miss Lorde purchased a bottle of Grey Goose in California, priced at $36.99 and a gold leash for her tiger, priced at $3000 also in California. Finally, she purchased a ball gown in New Zealand, priced at $6,950.

How much total (including tax) did Miss. Lorde spend on her purchases?

\(^2\)I made up this investment, I have no idea how Dr. Dre or his associates spend their money.

\(^3\)also totally made up, I’ve never had a celebrity discuss their investments with me.