Math 150 – Spring 2017 Names:_____

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Assignment: G10 _____

(1) Suppose that you deposit $225 per month into an annuity that pays 4.375% interest.

a. How much is in the account after 20 years?

b. How much did you pay into the account over 20 years?

c. How much interest did you earn in 20 years?

d. What annually compounded rate is this equivalent to if you were to deposit the entire sum computed in part (b) and allow it to earn interest for 20 years?

(2) A bank is offering a fixed rate of 4.125% interest on an annuity, provided you make equal payments every month. How much should invest each month so that you have $100,000 to contribute to your kids' college tuition 25 years from now?

(3) Which is better?

a. $75 paid monthly @ 5.75% quarterly or $150 paid bimonthly @ 5.85% bimonthly
b. $1200 paid annually @ 4.125% annually or $25 paid weekly @ 3.725 biweekly

(4) An annuity pays 3.35% interest compounded monthly. You make bimonthly payments of $100. How much is the annuity worth after one year? After two years?

(5) Which is better?

a. $100 paid bimonthly @ 3.35% monthly or $50 paid biweekly @ 3.725% weekly
b. Quarterly payments @ 3.35% bimonthly or Equivalent monthly payments @ 3.725% monthly

(6) What is the monthly payment for a 30-year home mortgage for $125,000 at 3.635%?

(7) You can put $175 each month toward a car payment.

a. If a local bank offers auto loans at 3.75% for 3-year loans, how much can you afford to spend on a car?

b. Your parents offer to pay for the car as long as you pay them back 5% simple interest after 3 years. How much would you owe them?

c. Which of the two scenarios above is better for you?

(8) Why do some loans often have a penalty for early payoff?