

1. (30 marks) Using formulas we derived in class, calculate the accumulated amount after 3 years if the principal is \$989.98 and the annual interest rate is 4% for
 - a) simple interest,
 - b) compound interest compounded yearly,
 - c) compound interest compounded quarterly,
 - d) compound interest compounded daily (assume 365 days in a year).

2. (30 marks) Suppose that you have a bank account with a balance of \$4532.10 at the beginning of the year and \$4632.10 at the end of the year (you made no deposits to the account). Your bank advertises "Continuous Compounding," but in fact compounds daily.
 - a) What effective rate did you receive? (the effective rate is the APY since this is an annual rate)
 - b) What nominal annual rate r is the calculation based on (assuming daily compounding)?
 - c) What difference (get a dollar value) is there between what the bank is doing and true continuous compounding over one year? Use the nominal annual rate r you found in part b) for both cases.

Hint: This problem might involve a bit more thinking than just substituting into formulas. You will still need the formulas of course!