

Math 1030 Review: Exam 2

Exam 2 is on Thursday, April 17

4A: Taking Control of Your Finances

- Understand budget and cash flow.

Study Problems: 23–40.

4B: The Power of Compounding

- Calculate simple interest and compound interest on an account with a single (initial) deposit (the principle).
- Use the compound interest formula for accounts that are compounded more than once per year.
- Solve for the principle, or solve for the *APR* in this formula.
- Use *APY* (Annual Percentage Yield) to compare two different investments.

Study Problems: 41–44, 47–64

4C: Savings Plans

- Use the savings plan formula to compute the balance on a savings account with regular monthly deposits.
- Calculate the total return and the annual return on an investment.
- Use the annual return to compare two different investments.

Study Problems: 45–66

4D: Loans, Credit Cards, and Mortgages

- Use the loan payment formula to calculate the monthly payment on a loan such as for an automobile or home mortgage.
- Understand some of the secondary considerations in choosing a mortgage, such as closing costs, points, and fixed rate versus adjustable rate mortgages.

Study Problems: 25–34, 39–42, 47–54

8A: Exponential Growth

- Understand the impact of doublings and why exponential growth cannot continue (in the real world) indefinitely.

Study Problems: 19–36

8B: Doubling Time and Half-Life

- Understand doubling time, half-life, and the rule of 70.
- Calculate the new value of an exponentially growing quantity using the exponential growth formula.
- Know how and when to use the approximate doubling time formula to estimate how long it takes for an exponential quantity to double.
- Know how and when to use the exact doubling time formula. This includes knowing how to calculate logarithms.

- Calculate the new value of an exponentially decaying quantity using the exponential decay formula.
- Know how and when to use the approximate half-life formula to estimate how long it takes for an exponential quantity to halve.
- Know how and when to use the exact half-life formula. This includes knowing how to calculate logarithms.

Study Problems: 35–44, 47–62