

First Exam Re-test CE 203 — CIVIL ENGINEERING SYNTHESIS I — SPRING '07

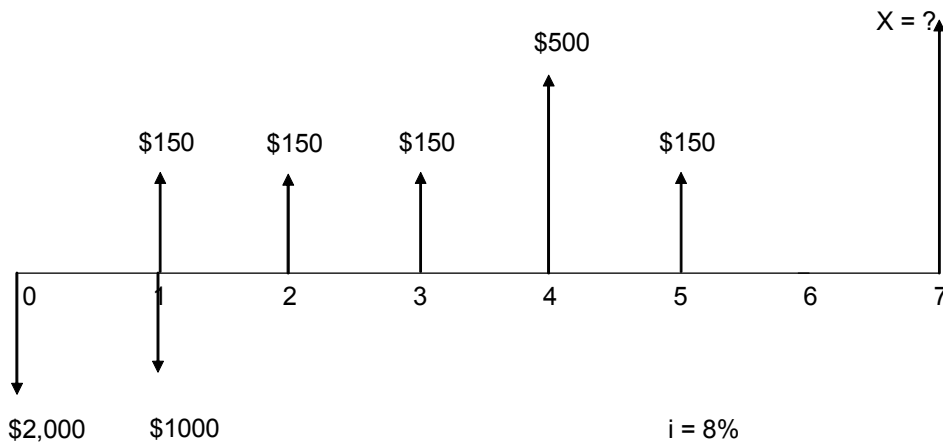
1. An engineering freshman wants to purchase a PC to use during the five years that she plans to study civil engineering at ISU. After looking around a bit, she finds that a well-equipped PC with software can be purchased for \$1,250. The PC should have a market value of at least \$200 if she sells it when she graduates after five years (assuming she graduates in 60 months). Assume that no maintenance will be required. Use an interest rate of 9% compounded monthly. Determine the monthly cost of owning the computer.

2. You want to buy a house and can pay a \$5,000 down payment and a mortgage payment of \$500 each month. Thirty-year mortgage loans are available for 6% per year. What is the most expensive house you can buy?

3. What is the maximum annual maintenance expense that you could afford to spend on your car over its life in order to reduce the cost of periodic major engine overhauls by \$300? Assume the car has a life of nine years and overhauls occur every three years. Assume an interest rate of 7% per year, and you do not rebuild the engine in the 9th year.

4. The first cash flow of a 25-year series of quarterly cash flows is equal to \$35,000. Each cash flow in the series decreases by \$800. Find the amount of each cash flow in an equal quarterly cash flow series that is equivalent to the decreasing cash flow series. The interest rate is 14% and compounding is quarterly.

5. Use the concept of equivalence to calculate the following:



6. Calculate A for an interest rate of 6%.

