

MATH 20C: FUNDAMENTALS OF CALCULUS II
WORKSHEET, DAY #17

Problem 1. Find the total value of the income stream $R(t) = 40000$ on the interval $0 \leq t \leq 5$ and find its future value at the end of the interval using the interest rate 10%.

Problem 2. Find the total value of the income stream $R(t) = 50000 + 2000t$ on the interval $0 \leq t \leq 10$ and find its present value at the beginning of the interval using the interest rate 5%.

Problem 3. You begin saving for your retirement by investing \$700 per month in an annuity with a guaranteed interest rate of 6% per year. You increase the amount you invest at the rate of 3% per year. With continuous investment and compounding, how much will you have accumulated in the annuity by the time you retire in 45 years?