Classroom to Campus: Math and Stats Challenge

Grade 12 – MAP4C

Topic B: Personal Finance
Comparing Investment Options for Maximizing College Savings Growth

Samantha is saving for her college education. A regular college tuition is about $2800 per semester. Samantha is considering two options for growing her money to save the amount needed for tuition.

- Option 1 - Savings Account Option: a savings account that earns 4.4% interest compounded quarterly;

- Option 2 - Rate-Climber GIC offered by a local credit union: the GIC has a three-year term with the following interest rates: 4% in the first year, 5% in the second year, and 6% in the third year, with interest compounded semi-annually.

a) What amount today would be equivalent to $2800 two years from now, if the money is invested in the Savings Account Option with an interest rate of 4.4% compounded quarterly? *(Round your final answer to the nearest cent.)*

b) What amount today would be equivalent to $2800 three years from now, if the money is invested in the Rate-Climber GIC Option with 4%, 5%, and 6% compounded semi-annually for each successive year? *(Round your final answer to the nearest cent.)*

c) How much would Samantha need to invest today in the better option between the Savings Account Option and the Rate-Climber GIC Option if she wanted to achieve a maturity value of $5600 after 3 years? *(Round your final answer to the nearest cent.)*

d) If Samantha has $5000 today, calculate the maturity value of her investment after three years if she invests in the better option between the Savings Account Option and the Rate-Climber GIC Option. *(Round your final answer to the nearest cent.)*

e) What annual interest rate, compounded annually, will be equivalent to the Rate-Climber GIC Option that offers 4%, 5%, and 6% compounded semi-annually over a three-year period? *(Provide your final answer as a percent rounded to two decimal places.)*