

Classroom to Campus: Math and Stats Challenge

Grade 11 – MBF3C

Topic B: Personal Finance

Calculating Growth with Varying Interest Rates

Maya is just starting high school and her grandparents gift her \$20,000 to help her save for a future goal, like college or a trip to Europe. Maya decides to invest the money.

For the first 2 years, her investment earns 5% interest compounded quarterly. For the next 2 years, she finds a better account offering 7.5% interest compounded semi-annually.

- How much will her investment be worth at the end of 4 years? *(Round your final answer to the nearest cent. Include units.)*
- How much interest did she earn during the first 4 years? *(Round your final answer to the nearest cent. Include units.)*
- If Maya had secured the entire \$20,000 in the account at 7.5% interest for 4 years compounded semi-annually, how much would she have at the end of 4 years? *(Round your final answer to the nearest cent. Include units.)*
- What single annual interest rate compounded annually over 4 years would have resulted in the same final amount as in part c)? *(Provide your final answer as a percent rounded to two decimal places.)*
- If Maya invested the same \$20,000 for 10 years with the same interest rate as in part d) (compounded annually), how much would she have at the end of the 10 years? *(Round your final answer to the nearest cent. Include units.)*

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