

Mathematics Grade 8 Unit 11 – Rubric 1

Grade/Subject/(Course)

Grade 8 / Mathematics

Course Version

Mathematics Grade 8 Unit 11 PA 01

Provide access to an online interest calculator or the Internet.

Analyze the problem situation(s) described below. Organize and record your work for each of the following tasks. Using precise mathematical language, justify and explain each solution process.

1. Amy has four years before she graduates from high school, so she has begun planning for college. Amy plans to graduate from a four-year university. She wants to compare the cost of spending the first two years of college at a local two-year community college and finishing the last two years at a state university to attending all four years at a state university.

Estimated Annual Costs and Contributions

	Community College	State University
Tuition and Fees	\$1,900	\$8,108
Books and Supplies	\$892	\$1,207
Room and Board	\$0	\$8,772
Transportation	\$1,741	\$550
Other Costs	\$2,066	\$1,800
Family Contribution	\$1,500	\$1,500

- a. Estimate and compare the costs of each scenario using the information provided in the table.
- b. For each scenario, devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance.
2. Amy's aunt opened a college savings account for her and regularly deposits \$150 each month.
 - a. Explain how the number of years and amount Amy's aunt regularly deposit affects the total amount of money invested for her college education.
3. Amy was gifted \$20,000 to use towards her education when she was a young child. This gift was placed in a college savings account that will pay 2.3% interest upon withdrawal. Amy's parents placed \$20,000 into another college savings account for her that pays 1.7% compounded annually.
 - a. Calculate and compare the simple interest and compound interest earnings in both college savings accounts after 10 years.
4. Amy knows that she will eventually need to take out a student loan to pay for her tuition and expenses. The school offers tuition loans that Amy can repay in 5 years at an interest rate of 4.95% or in 7 years at an interest rate of 6.15%. Both loans are compounded annually.
 - a. Use an online interest calculator to calculate the total cost of repaying \$8,500 in student loans under both options.
 - b. Compare the costs of repaying the \$8,500 loan under both options and describe how the interest rate and loan length affect the cost of credit.
5. While at college, Amy will use a debit card for everyday expenses and a credit card for emergency expenses.
 - a. Explain the advantages and disadvantages of these payment methods.
 - b. Amy uses a credit card to pay for her lunches for a month instead of using her debit card. Determine and explain if this represents a financially responsible decision.

Standard(s): [8.1A](#) , [8.1B](#) , [8.1C](#) , [8.1D](#) , [8.1E](#) , [8.1F](#) , [8.1G](#) , [8.12A](#) , [8.12B](#) , [8.12C](#) , [8.12D](#) , [8.12E](#) , [8.12F](#) , [8.12G](#)

ELPS [ELPS.c.1A](#) , [ELPS.c.1C](#) , [ELPS.c.1E](#) , [ELPS.c.2D](#) , [ELPS.c.3B](#) , [ELPS.c.4G](#) , [ELPS.c.4K](#) , [ELPS.c.5C](#) , [ELPS.c.5D](#) , [ELPS.c.5G](#)

