



## Practice – Part 2

**Instructions:** Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers under the Solutions tab in Moodle.

You will have to return to the course in Moodle to use the Payment Calculators to answer the following questions.

1. Miguel has a five-year-old truck with 125 000 km. He drives about 25 000 km/year. His truck has a fuel consumption of 12.1 L/100 km. He records his estimated costs for the next year in a table.

Cost	Estimated Yearly Cost Including Tax
oil change	\$130.00
rotate tires	\$50.00
replace air filter	\$60.00
registration	\$50.00
repair front brakes	\$400.00
insurance	\$800.00
replace timing belt	\$1 100.00
parking	\$80.00
fuel	

- a. Calculate the cost of fuel if the price of gas is \$1.19/L.
- b. Calculate the total fixed costs.
- c. Calculate the total variable costs.
- d. Calculate the total cost of operating the vehicle for a year.
- e. How much money should Miguel set aside per month to pay for his vehicle expenses?

2. Heather is trying to decide if she should buy a new car, buy a used car, or lease a new car. She recorded the estimated monthly expenses in a table. The loans and the lease are for a 36 month term.

<b>Cost</b>	<b>New Car</b>	<b>Used Car</b>	<b>Lease</b>
monthly payment	\$542.36	\$213.54	\$292.17
oil change	\$10.00	\$10.00	\$10.00
maintenance and repairs	\$0.00	\$150.00	\$0.00
fuel	\$60.00	\$90.00	\$60.00
registration	\$5.00	\$5.00	\$5.00
insurance	\$150.00	\$62.50	\$150.00
total	\$767.36	\$531.04	\$517.17

- Calculate the monthly fixed costs of purchasing a new car.
- Calculate the monthly variable costs of purchasing a used car.
- Why does the used car, but not the new car, have maintenance costs?
- What costs remain the same regardless of which vehicle Heather gets?
- Calculate the total cost for the new car for the 36 month term.
- Calculate the total cost for the used car for the 36 month term.
- Calculate the total cost for the leased car for the 36 month term.
- Which of the three options is the most economical for 36 months?
- Which of the three options is the best value?
- How do the fixed costs change after 36 months?

3. Gabriel is considering two different options. He has set aside \$900.00 per month for car expenses.

Option 1: Buying a car for \$15 486.00 with payments for 4 years at an annual interest rate of 6.9%. The estimated expenses for Option 1 are recorded in the table.

Cost	Option 1
monthly payment	
oil change	\$15.00
fuel	\$100.00
registration	\$7.00
insurance	\$125.00
total	

- Use the *Monthly Payment Calculator* to find the monthly payment for Option 1. Once the monthly payment is calculated, record it in the table. Calculate the total monthly cost for Option 1.
- Use the *Monthly Payment Calculator* to calculate the monthly payment for Option 2.

Option 2: Buying a car for \$25 830.00 with payments for 6 years at an annual interest rate of 5.9%.

The estimated expenses for Option 2 are recorded in the table.

Cost	Option 2
monthly payment	
oil change	\$15.00
fuel	\$130.00
registration	\$7.00
insurance	\$175.00
total	

- What will be the monthly expenses for Option 1 in 4 years?
- What will be the monthly expenses for Option 2 in 4 years?
- Would Option 1 or Option 2 be the best choice for Gabriel?