Lesson 7 - BUY OR LEASE A VEHICLE

Many businesses need a vehicle in order to operate. If you need a car, truck, or other vehicle for your business, you have a few different payment options:

- You can buy the vehicle by paying the full purchase price including tax
- You can pay a down payment and take out a loan for the rest of the purchase price. You will then have to make monthly payments on the loan.
- You can lease the vehicle, making regular monthly payments over a fixed term.

If you lease a vehicle, you will have to sign an agreement that may include the following conditions:

- LEASE TERM: the length of time you will be using the vehicle
- LEASE RATE: the amount of your monthly payments (taxes and interest charges are usually built into the monthly payments)
- SECURITY DEPOSIT: a payment made at the start of the lease term, which is refunded if the vehicle is returned in good condition at the end of the term
- KILOMETER ALLOWANCE: the maximum distance that can be driven over the term of the lease
- DELIVERY CHARGE: a payment made at the start of the lease term, to cover environmental fees and taxes
- OPTION TO PURCHASE: you may be able to buy the vehicle at the end of your lease term based on its residual value (the vehicle’s value when the lease is over, usually specified in the lease agreement)

** refer to these definitions as you complete this assignment**

EXAMPLE 1: Roger plans on purchasing a three-quarter ton truck. The purchase price is $29499.00. He must also pay 5% GST and 7% PST.

a) What is the total price of the truck?

\[
\begin{align*}
$29499 \times 0.05 &= $1474.95 \\
$29499 \times 0.07 &= $2064.93
\end{align*}
\]

Total: $29499 + $1474.95 + $2064.93 = $33038.88
b) Roger does not have enough money saved to pay the full purchase price. He can make a down payment of $10 000.00, then take out a bank loan for the rest. The bank offers him a loan at an interest rate of 4.50% per annum, compounded annually, for a 4-year term. What will Roger pay in total for the truck?

Use the following compound interest calculator link to calculate how much Roger will repay on the loan. (Do not fill out the optional portion of the calculator.)

https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php

\[
\text{Interest} = \frac{P \times R \times T}{100} = \frac{10000 \times 4.50 \times 4}{100} = 1800\text{ per year}
\]

\[
\text{Principal} = \text{Total Cost} = \text{Interest} + \text{P}
\]

\[
\text{Total Cost} = 1800 + 10000 = 11800\text{ dollars}
\]

\[
\text{Total Cost} = 11800 + 1800 = 13600\text{ dollars}
\]

EXAMPLE 2: Francine needs a van for her catering company. She has found one that costs $25 675.00, including all fees and taxes. She has two options:

- She can lease the van for 4 years, for $450/month with a security deposit of $2000.00 and a delivery charge of $529.96.
- She can use the $2529.96 as a down payment and take out a loan at an interest rate of 3.15% per annum, compounded monthly for a period of 4 years.

\[
\text{Interest} = \frac{P \times R \times T}{100} = \frac{2529.96 \times 3.15 \times 48}{100} = 37474.29\text{ dollars}
\]

\[
\text{Total Cost} = \text{Lease Cost} + \text{Loan Cost}
\]

\[
\text{Total Cost} = 450 \times 48 + 2529.96 + 37474.29 = 24129.96\text{ dollars}
\]
b) Calculate the total cost of purchasing the van, including the interest on the loan. Use the following compound interest calculator link to calculate the cost of the loan. (Do not fill out the optional portion of the calculator.)

https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php

\[
\begin{align*}
\text{Cost of van} & \quad \text{Cost of interest} \quad \text{Total cost} \\
$25,675 & \quad -$2,000 \quad -$529.96 \\
\hline
\text{Total cost} & \quad = \quad $23,145.04
\end{align*}
\]

Use online calculator for cost of loan

\[
= \quad $26,248.67
\]

Total cost: $26,248.67 + $2,000 + $529.96

\[
= \quad $28,778.63 \text{ loan}
\]

c) What would be the monthly payments on the loan?

\[
\begin{align*}
\text{Total cost} & \quad \div \quad \text{Number of months} \\
$26,248.67 & \quad \div \quad 48 \\
\hline
\text{Monthly payment} & \quad = \quad $546.85
\end{align*}
\]

d) What are the pros and cons of buying vs. leasing a vehicle in this case?

<table>
<thead>
<tr>
<th>Purchase</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>own vehicle after 4 years</td>
<td>higher monthly payments</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Lease</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>monthly payment less</td>
<td>would not own vehicle after 4 years</td>
<td></td>
</tr>
<tr>
<td>costs less in total $24,129.96</td>
<td>costs more in total $28,778.63</td>
<td></td>
</tr>
</tbody>
</table>
EXAMPLE 3: Wen is planning to lease a vehicle to use for deliveries for his restaurant. The lease has the following conditions:

- Term: 4 years
- Monthly payments: $457.92
- Security deposit: $500.00
- Delivery charge: $629.05
- Kilometer allowance: 25 000/year ($0.12/km for each additional kilometer)

The residual value at the end of the lease term is $13 880.00

a) How much will it cost to lease the vehicle over a 4 year term? Assume Wen would return the vehicle in good condition, having driven 92 000 km.

\[
457.92 \times 48 \text{ months} = 21 980.16
\]

\[
21 980.16 + 629.05 = 22 609.21
\]

b) If Wen purchases the vehicle at the end of the lease term, how much will he have paid for it? If he buys the vehicle at the end of his lease, his security deposit is returned and he is not required to pay if he goes over his kilometer allowance.

\[
22 609.21 + 13 880 = 36 489.21
\]

c) If Wen buys the vehicle instead of leasing it, it will cost $29 674.00, including taxes and fees. What is the difference in price between purchasing the vehicle and leasing it, then purchasing it at the end of the lease term?

\[
36 489.21 - 29 674 = 6815.21
\]
Lesson 7 - ASSIGNMENT: BUY OR LEASE A VEHICLE

1. Stefania lives in Broderick, SK, and plans to buy a half-ton truck. She has two options:
   • She can purchase a new truck, with only the basic features, for $22 789.00 plus 5% GST and 5% PST.
   • She can buy a used one with approximately 120 000 km on it, but with many upgraded features, for the same price plus 5% GST (PST is not paid on used vehicles in Saskatchewan).

a) Calculate how much Stefania would have to pay for each truck.

b) Give one reason in support for and one reason against Stefania purchasing each truck.

2. George needs to buy a small car for his courier business in Edmonton, AB. He has two options:
   • He can buy the car for $19 195.00 plus 5% GST
   • He cannot pay in full so he must make a down payment of $5000.00, then take out a loan to pay the rest of the purchase price. The bank offers him a loan at an interest rate of 2.50% per annum, compounded monthly for 3 years.

a) What is the total purchase price of the vehicle?
b) If George makes the down payment and takes out the loan, how much more will he pay for the car than if he had paid the entire purchase price?

https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php

3. Gavin plans to buy 4 snowmobiles for his company in Yellowknife, NT. Each snowmobile is listed at $9989.00, and he must pay 5% GST. Gavin has $19 750.00 saved for a down payment. He takes out a loan for the rest of the purchase price at an interest rate of 3.20% per annum, compounded semi-annually for 4 years. What is the total cost of the snowmobiles?

https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php

4. Elena will be leasing a delivery truck for her furniture business. The terms of the lease are as follows:
   - Term: 5 years
   - Monthly payments: $529.95
   - Security deposit: $1000.00
   - Delivery charge: $792.27

a) How much will Elena have to pay on the day she first picks up the truck?
b) Assuming Elena returns the truck in good condition at the end of the lease term, what is the total cost of the lease?

5. Vern needs a truck for his business. He can choose one of the following options:

   - He can lease a truck for $687.00/month for 48 months. There is a $376.00 delivery fee, a $2000.00 down payment, and a $750.00 security deposit.

   - He can buy the truck by making a $2750.00 down payment, including taxes, and monthly payments of $850.00 for 48 months.

   a) Calculate the cost of leasing the truck for 4 years. Assume he will get the security deposit back at the end of the lease term.

   b) Calculate the cost of buying the truck.

   c) Which option would you recommend Vern choose? Why?
6. Candice needs a car for her sales business. The vehicle has a purchase price of $26,547.00 (including all taxes and fees). She has three options:

i. She can lease it at a cost of $465.00/month for 3 years and then purchase it at the end of the lease term for a residual cost of $13,539.00 cash.

ii. She can lease it at a cost of $465.00/month for 3 years and then purchase it at the end of the lease term for a residual cost of $13,539.00, for which she takes out a loan at a rate of 3.00% per annum, compounded monthly for 1 year. [https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php](https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php)

iii. She can purchase it by taking out a bank loan at a rate of 2.50% per annum, compounded quarterly over a term of 3 years. [https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php](https://www.thecalculatorsite.com/finance/calculators/compoundinterestcalculator.php)

What is the cost in each case?