

Example 6: Comparing Cost to Purchase vs. Cost to Lease

Magdalena is looking to buy or lease a 2019 GMC Terrain. The cost to purchase the vehicle is \$34 804 after taxes. The cost to lease the vehicle is \$339 a month (before taxes) for 48 months with a required \$2560 down payment.

- a) If she chooses to purchase the car, she can access a loan from her bank at 4% for 5 years. If the monthly payment for this loan is \$644.57, calculate the total amount that she will pay back to the bank over the term of the loan.

$$\begin{aligned} \text{TOTAL Amount PAID BACK} &= \text{monthly payment} \times 12 \text{ months} \times \# \text{ of years} \\ &= 644.57 \times 12 \times 5 \text{ years} \\ &= \boxed{\$ 38\,674.20} \end{aligned}$$

- b) Calculate the total cost to Magdalena to lease the vehicle.

$$\text{TOTAL COST} = \text{TOTAL Payments to Bank} + \text{Down payment} = \boxed{\$ 20\,784.64}$$

$$18\,224 + 2560$$

$$\begin{aligned} \text{TOTAL payments} &= (\text{monthly payment} + \text{taxes}) \times 12 \text{ months} \times \text{years} \\ &= (339 \times 1.12) \times 12 \times 4 \text{ years} \\ &= 379.68 \times 12 \times 4 = \$18\,224.64 \end{aligned}$$

$$\text{TOTAL COST} = 18\,224 + 2560 = \boxed{\$ 20\,784.64}$$

- c) The residual value of the GMC Terrain is 70% of its original value. If the original value was \$30 800, determine the cost to Magdalena if she decides to purchase the vehicle at the end of the lease.

$$\begin{aligned} \left. \begin{array}{l} \text{TOTAL COST to} \\ \text{purchase after} \\ \text{lease is over} \end{array} \right\} &= \text{original value} \times 70\% + \text{taxes} \\ &= (30\,800 \times 0.70) \times 1.12 \\ &= 21\,560 \times 1.12 = \boxed{\$ 24\,147.20} \end{aligned}$$

- d) What is the total cost to Magdalena if she leases the Terrain, and then purchases the vehicle at the end of the lease?

$$\begin{aligned} \text{TOTAL COST to} \\ \text{lease and purchase} &= \text{Total cost to lease} + \text{Residual value} \\ &= 20\,784.64 + 24\,147.20 \\ &= \boxed{\$ 44\,931.84} \end{aligned}$$

- e) Calculate the extra cost to Magdalena if she leases and purchases the car, as opposed to purchasing the car outright.

$$\begin{aligned} \text{EXTRA COST} &= (\text{Lease} + \text{Residual value}) - \text{Total paid to purchase} \\ &= 44\,931.84 - 38\,674.20 \\ &= \boxed{\$ 6\,257.64} \end{aligned}$$

- f) Give two reasons why a person might lease and then buy a car, as opposed to financing and buying the car outright.

- lower monthly payment.
- If driven more than the allowed kilometres, they will buy the vehicle and avoid paying a penalty.