Buying a New Vehicle

Tara is an electrician in Saskatchewan. She wants to buy a new snowmobile. What are some advantages of buying a new vehicle?

1. A new vehicle will have a warranty. Why might Tara want to have a warranty on her snowmobile?

Tara might want to have a warranty because e.g., if something goes wrong, she will not need to pay to fix it.

2. Tara can buy a new vehicle with the features and options she wants. What might Tara want on her snowmobile?

Tara might want e.g., upgraded shock absorbers or a cargo bag.

Example 1

Dhanesh is a carpenter in Fort McMurray, Alberta. He wants to buy a pickup truck. It costs $28,595.00. The depreciation will be 55% in the first 3 yr. How much will the truck be worth after 3 yr?

Solution

A. What is the total amount of depreciation in the first 3 yr?

Depreciation: 55% of new price

\[ \text{Depreciation} = (0.55)(28,595.00) \]

\[ = $15,772.25 \]

B. How much will the truck be worth after 3 yr?

Value after 3 yr: price – depreciation

\[ = 28,595.00 - 15,772.25 \]

\[ = $12,822.75 \]

After 3 yr, the truck will be worth $12,822.75.
Example 2
Brianna lives in Calgary, Alberta. She plans to buy a new car. The base price is $18,455. She made this list of the extra charges she has to pay. What is the total purchase price, including sales tax?

Solution
A. What is the total vehicle price?
Total vehicle price: base price + extra charges
= $18,455 + $1,489 + $1,250 + $750 + $400 + $100
= $22,444

B. What is the total purchase price, after sales tax?
Total purchase price:
100% of total vehicle price + 5% sales tax
= 105% of total vehicle price
= 105% of $22,444
= (1.05)($22,444), or $23,566.20
The total cost is $23,566.20.

Example 3
Jesse lives in Kelowna, British Columbia. He used this online calculator to determine the monthly loan payment on a new car. How much interest will Jesse pay on the loan?

Solution
A. How much does Jesse need to borrow?
After-tax price:
(112% of base price)(purchase price − trade-in value)
= (1.12)($25,895.55 − $4,500.00), or $23,963.02
Loan: after-tax price − down payment
= $23,963.02 − $1,000.00, or $22,963.02
Jesse needs to borrow $22,963.02.

B. How much interest will Jesse have to pay?
Interest: (number of months)(monthly payment) − loan amount
= (60 mo)($442.87/mo) − $22,963.02, or $3,609.18
Jesse will pay $3,609.18 in interest.
Practice

1. Calculate the depreciation and the depreciated value.
   a) Base price of $24,500, depreciated by 25% in 1 yr
      Depreciation: \((0.25)(24500) = 6125\)
      Depreciated value: $24,500 - $6125 = $18,375
   b) Base price of $31,375, depreciated by 48% in 3 yr
      Depreciation: \((0.48)(31375) = 15060\)
      Depreciated value: $31,375 - $15,060 = $16,315

2. Frank bought a new van for his air-conditioning business. He took out a 5 yr loan through the dealer. The loan is for $18,592. The total interest on the loan is $911.60. What is the amount of each monthly payment?
   Monthly payment:
   \([\text{loan amount} + \text{interest}] \div \text{number of payments}\)
   \[= (18592 + 911.60) \div 60\]
   \[= 325.06\]
   Each monthly payment is $325.06.

3. Kendra and Sam live in Victoria, British Columbia. They are buying a new car. The base price is $25,340. They have $3500 for a down payment. They must pay these extra charges:
   - delivery charge: $650
   - freight: $425
   - federal air conditioning tax: $100
   How much must Kendra and Sam pay on delivery?
   Total price of car: $25,340 + $650 + $425 + $100 = $26,515
   After-tax price: \((1.12)(26515.00) = 29696.80\)
   After-tax price less down payment:
   $29,696.80 - $3500.00 = $26,196.80
   Kendra and Sam must pay $26,196.80 on delivery.

4. When you buy a new vehicle, you have other costs that are not included in the total amount you pay the dealer. Research other costs in your province or territory.
   e.g., new licence plates, yearly vehicle validation sticker, pre-delivery inspection
5. Tootega lives in Nunavut. He bought a new snowmobile.
   • The purchase price was $11,023.95, including taxes.
   • He made a down payment of $1,200.00.
   • He financed the rest of the purchase price with a 3 yr loan.
   • His monthly payments are $293.33.

   a) What is the total amount that Tootega will pay?
      
      Total amount:
      down payment + (number of months)(monthly payment)
      
      $1200.00 + (36 \text{ mo})(\$293.33/\text{mo})$
      
      = $11,759.88
      
      Tootega will pay a total of $11,759.88.

   b) How much interest will Tootega pay?
      
      Interest paid:
      total amount – purchase price
      
      $11,759.99 – $11,023.95$
      
      = $735.93
      
      Tootega will pay $735.93 in interest.

6. Some people pay cash for a new vehicle. Other people finance all or part of the cost with a loan.

   a) What would be an advantage and a disadvantage of paying cash?
      
      e.g., Advantage: You do not pay monthly payments or interest charges.
      
      Disadvantage: You need the entire amount when you buy the vehicle.

   b) What would be an advantage and a disadvantage of a loan?
      
      e.g., Advantage: You can buy a vehicle even if you do not have enough money for the entire cost right away.
      Disadvantage: You must pay monthly payments and interest charges. The lender can take the car back if you cannot afford the payments.

7. Most car dealers offer financing on new cars. Banks and other financial institutions also offer loans. Research to find out which option offers lower interest rates in your area.

   e.g., I found an advertisement in the newspaper that said a car company was offering 2.9% financing. A sign in a bank near me had a higher interest rate.