**Grade 11 College Math**                                    **Day:** <u>**Lesson 6 - 5**</u>

**Unit:**  <u>**Personal Finance**</u>                                    **Topic:**  <u>**Buying a Vehicle**</u>

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⊞ *homework check:*  <u>**Lesson 6 - 4**</u>

⊞ *note:*  <u>**Buying a Vehicle**</u>

    When buying a vehicle, you must determine the amount of a payment given the cost of the vehicle.  For example, Karen knows that she cannot afford to pay more than $450 a month for a new vehicle.  If the car costs $15 999.99 plus tax, and the interest is 4.9% compounded monthly with a term of 4 years, can she afford to buy this car?

$$HST = 13\%$$

$$total\ tax = 13\%$$

$$13\% = 0.13$$

$$15999.99(1.13) = \$18079.99$$

$$\frac{0.049}{12} = 0.00408$$

$$A = 18079.99(1 + 0.00408)^{48}$$

$$= \$21982.52$$

$$\frac{21982.52}{48} = \$457.97$$          Therefore, it looks as though the car is too

expensive for Karen if she wants to stick to her budget of $450 per month.

    If Karen wants to save some money, she can enter into a lease agreement.  In this case, she has to make a $1500 down payment and make 48 payments of $349.00.  At the end of this agreement, the car is returned to the dealership.

    a)  How much will Karen pay to lease the vehicle?

$$\$349(48) + 1500 = \$18252$$

    b)  How much does Karen save overall by leasing the vehicle?

$$\$457.97(48) = \$21982.56$$

$$21982.56 - 18252 = \$3730.56$$

⊞ *homework assignment:*  <u>**Lesson 6 - 5**</u>

**Lesson 6 - 5:**

**1. Calculate the after tax cost (HST 13%) of the following new and used vehicles. (6 marks)**

a)  **minivan at $22 950**               b)  **sports car at $36 250**               c)  **SUV at $17 990**

**2. If the interest is compounded monthly, how much will the following vehicles cost over 3 years? (6 marks)**

a)  **$4000 borrowed at 9%**          b)  **$8500 borrowed at 8.5%**          c)  **$15 000 at 9.25%**

**3. Calculate the total amount of interest paid for each loan? (3 marks)**

a)                                              b)                                              c)

**4. Calculate the total cost of each new car lease.  (6 marks)**

a)  **a car worth $18 000 leasing for $1000 down plus 36 payments of $299**

b)  **a minivan worth $23 500 leasing for 48 payments of $399**

c)  **a luxury sedan worth $72 000 leasing for a $7500 down payment plus 39 monthly payments of $899**

**5. Calculate the HST due on the following private sales upon registration. (6 marks)**

a)  **$2500 for a 9 years old car**       b)  **$4200 mid-size sedan**       c)  **$750 for a 33 year old camper**

**6.  To lease a car worth $30 000, a customer agrees to pay a $1000 down payment plus 48 payments of $525.**

**a)  What is the total cost of the vehicle? (2 marks)**

**b)  Calculate the average cost per month over the life of the lease. (2 marks)**

**c)  After 48 months, the customer decides to buy the vehicle.  He must pay another $10 500. How much of the new price is interest?  (2 marks)**

**7.  Calculate the after tax cost of a truck worth $6500. (2 marks)**

**8.  Rob wants to save for the truck in #7.  He finds an investment account that pays 3.25% interest, compounded daily.  How much money does Rob need to save each week starting now to pay cash for the truck in 2 years?  (3 marks)**

**9.  Until Rob buys his truck, he will drive his parent's car.  The increase in insurance is $760 per year and he estimates he will spend $20 a week on fuel.  How much will it cost Rob while he tried to save for his own truck? (2 marks)**

**10.  A local car dealer is selling a used truck for a pre-tax price of $22 945 plus $1000 carfax report.  He is offering financing at 0.9% compounded monthly for 48 months. Determine the total cost of the truck. (3 marks)**