Mr. Kaufman: Car – Buy or Lease Homework (New)

Purchase formulas:

$$PMT = A\left(\frac{i}{1-(1+i)^{-n}}\right)$$

PMT = payment per period
A = the loan amount
i = the interest rate ***per payment period***
n = the total number of payments

Leasing Formulas:

Net capitalized cost = negotiated price – down payment

Money Factor: $\dfrac{\text{annual interest rate as a percent}}{2{,}400}$

Average Monthly Finance Charge:
(net capitalized cost + residual value) * money factor

Average Monthly Depreciation:
$\dfrac{\text{Net capitalized capital cost – residual value}}{\text{term of the lease in months}}$

Monthly Lease Payment:
P = Average Monthly Finance Charge + Average Monthly Depreciation

You buy a Corolla with an MSRP of $27,500. You negotiate a final price of $22,250 and make a down payment of 22 percent after sales taxes of 6%. This is the same information to use if you lease the car as well.

The annual interest rate for a loan or lease is 9.6% APR over 60 months.

Remember, Sales tax is 6% of the final price if you purchase the car. If you lease then the sales tax is added AFTER you calculate the monthly payment.

The residual value for a lease is 33% of the MSRP. This amount is also the salvage value if you sell the car for a purchase.

1) What is the total cost of the car? 23,585

2) What is the amount of the downpayment? 5188.70

3) What is the loan amount if you purchase the car? 18396.30

4) Determine the monthly car payment. 386.81

5) What is the interest you paid on the loan? 4812.39

6) What is the salvage value? 9075.00

7) How much will you have paid for the car over the 5 year period? 28,397.70

8) At the end of 5 years you sell the car for 33% of the MSRP. What is the net ownership cost to you for the 5 years you owned the car? 19322.70

9) Leasing – determine the net capitalized cost of the car. 17355.00

10) Leasing – determine the Money Factor? .004

11) Leasing – determine the Average Monthly Finance Charge. (Assume the net capitalized cost is $17,355) 105.72

12) Leasing – determine the Average Monthly Depreciation
   a. (Assume the net capitalized cost is $17,355) 138.00

13) Determine the monthly lease payment. Remember to add sales tax as detailed in the original problem. 258.34

14) How much will you have paid to lease the car for 5 years? 29,395.40

15) List the benefits of purchasing.

16) List the benefits of leasing.

Given the following costs for car tires:

322, 340, 360, 333, 408, 385, 360, 400, 372, 403, 329, 360

17) Find the quartiles $Q_1 = 336.50$ $Q_3 = 392.50$ $Q_2 = 360$ $Q_4 = 408$

18) Find the IQR (Interquartile Range) 56

19) Find the upper and lower limits. Lower 252.50 Upper: 476.50

20) Create a stem and leaf plot from the above data. (See answers on create a frequency chart next page

21) Find the range, mean, median and mode of the above data.
range = 86 mean = 364.33 median = 360 mode = 360

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(20)

Stem and Leaf Plot

32	2 9
33	3
34	0
35	
36	0 0 0
37	2
38	5
39	
40	0 3 8

28/8 = 288

(20)

Frequency Chart

amount	frequency	Total
322	1	322
329	1	329
333	1	333
340	1	340
360	3	1080
372	1	372
385	1	385
400	1	400
403	1	403
408	1	408
	12	4372