G. Excel Scenario Case – Auto: Lease versus Buy

Background: In this assignment, you are asked to prepare an Excel worksheet and apply Excel's Scenario Manager to help a user decide between (a) buying a new car with a loan, or (b) leasing a car followed by a purchase at the end of the lease. We assume that the user is most interested in comparing the monthly costs, as well as the total costs through the end of the lease period. Both cases differ significantly with respect to what cost-factors must be considered and how these factors are calculated. Besides the general differences between the buy- and lease-cases, the user is also interested in knowing how the mileage per year (high vs. low) impacts the results.

The main result of this assignment is the **Scenario Summary** that is generated by Excel's Scenario Manager (Figure G-8). The Scenario Summary can support decision making because it makes it easy to review and compare the outcomes of the decisions at hand, in our case "Buy a Car with a Loan" versus "Car Lease" for low and high yearly mileages, respectively.

Please, note that this assignment requires the extensive use of the IF-function because calculations depend on whether we are looking at the buy- versus lease-case. You also need a good understanding of Excel's Scenario Manager. If you are not familiar with either of these concepts, please review to the Excel Scenario Tutorial (Project Excel-F) you recently completed. We will also demonstrate how you can embed one function (i.e. two IF's) into another and introduce the MAX- and PMT-functions.

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G.1 – Downloading the Starting Spreadsheet Template

To start this tutorial, you will be given an Excel template with a basic setup for Scenario Manager. After a brief introduction to the problem given and the file template you will learn

(1) how to prepare a worksheet for the use of Excel Scenario Manager,
(2) how to create the scenarios in Scenario Manager,
(3) how to run the Scenario Manager and generate a report,
(4) how to format the Scenario Manager report, and
(5) how to interpret the results.

- All Excel projects are graded with the help of a computer system (Entropy), which means that you must follow directions closely and place all formulas, headings etc. in the exact cells specified or the grading system will not find your work. In particular, do not insert extra rows or columns!

- **Do you own work, and do not share any files with others**.

1. Download a starting template from Entropy as shown in Figure G-1. Go to https://csbapp.uncw.edu/entropy (or Google UNCW Entropy)

2. In the menu for MIS 213, find the Upload Assignment/Download Starting Template link

3. **Click to Download Starting Template for the Scenario Car Lease versus Buy Case**

File Upload/Download

The following projects are available for upload/download

Assignment Name	Due	Due Time	Late Acceptance Until	File Type	Upload	Download
Project 7 - Excel Refresher	12/25/2020	11:59 PM	12/25/2020	XLSX	Upload Now	Download Starting Template
Project 8 - Scenario Tutorial	12/31/2020	11:59 PM	12/31/2020	XLSX	Upload Now	Download Starting Template

Figure G-1: Entropy screen for Excel upload/download files

4. Save the downloaded file to your desktop or **Documents or Download Folder Do not open the spreadsheet in a browser**

5. Rename the file **yourLastNameScenarioCar.xlsx** as in appleScenarioCar.xlsx

6. **Do not share this file with anyone else; it has been created just for you.**

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G.2 – Understanding the Worksheet

Purpose: Use an Excel Spreadsheet as part of a Decision Support System to help a user decide whether to buy a new car with a loan or lease the vehicle.

1. Before we begin, let's review the different parts of the worksheet that you just downloaded and that has some parts already filled out (Figure G-2):
2.

1	**Buy a car with a loan, or lease it?**	
2	Note: This analysis ignores the time value of money	
3		
4	**1. Constants**	
5	Tag, title, registration fees (buy only)	$100.00
6	Lease acquisition fees (lease only)	$300.00
7	NC Sales tax (buy and lease)	3%
8	Depreciation of a car in percent per year (buy and lease)	20%
9	Allowed miles per year (lease only)	10,000
10	Cost per mile once maximum mileage is exceeded (lease only)	$0.10
11		
12	**2. User input**	
13	[B]uy with Loan or [L]ease?	**B**
14	Negotiated price (after dealer discounts)	$30,000.00
15	Interest rate per year	5%
16	Term in months	24
17	Expected miles driven per year	12,000
18		
19	**3. Key Results**	
20	Monthly payments	
21	Total cost of the car	

Figure G-2 Starter File (top portion)

Section 1. Constants: The first section contains several constants**,** that is, factors that are assumed to remain unchanged in the current case. The constants are referred to in other parts of the spreadsheet for various calculations, but no entries or changes need to be made here. Please, note that while the values for the constants have been chosen to reflect common industry practice, adjustments can be made easily by a user, for example to accommodate a change of the applicable sales tax.

Section 2. User Input: The second section is highlighted in yellow and is reserved for user input. Here, we allow the user to indicate what decision she or he is interested in (Buy or Lease), and to enter some basic figures associated with that decision, such as negotiated price for the car, interest rate, term in months and expected miles. For simplicity reasons the entries in B14 to B17 apply to both cases: purchase and lease. Please note that while numbers have already been filled into this section to help you get started, the user input section is really intended to allow the user to enter the values that are relevant to his or her situation.

Section 3. Key Results: The third section is highlighted in green and replicates the key results of this spreadsheet that are calculated at the bottom in section 5, for easy comparison. These results are essentially the output that is associated with the user input as entered into section 2. The remaining

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two sections 4 and 5 contain the steps needed to get from the user input (Section 2) to the key results (Section 3).

Section 4. Calculations: The fourth section contains various calculations that are required to arrive at the results. This section is where you will have to do most of the work in this assignment. Because many entries apply only to one option (buy or lease) they require the use of the IF-function.

Section 5. Totals: The fifth and final section sums up the **total payments** per month and over the full time of the mortgage or lease contract. Its main results will be then repeated to Section 3.

In the following, more detailed information is provided on each of the different sections of the worksheet:

3. **Constants – no entries need to be made:**

Row 5: **Tag, title, registration fees:** The summarized fees required to register a car have to be paid separately only by a customer who buys a car. In the case of a lease, these fees are usually not listed separately.

Row 6: **Lease acquisition fees:** Sometimes called "bank fees," a lease acquisition fee is an administration fee charged by leasing companies, much like points on a mortgage**.** The lease acquisition fees only apply to the lease-case.

Row 7: **NC Sales tax on car purchases and leases:** In North Carolina, the current tax rate for car-related sales is 3%, which is added to the purchase price (and thus the loan amount) of a car in the buy-case, and to the monthly lease fees in the lease-case. Sales tax is therefore a constant that needs to be referred to in both cases, buy and lease.

Row 8: **Depreciation per year:** The IRS estimates the useful lifetime of a car to be five years. So, for simplicity reasons, we assume linear depreciation and therefore apply a depreciation rate of 20% per year for both buy- and lease-cases. Please, be aware of the fact that this simplification is a major one because depreciation can vary *significantly* between car models and is typically greatest in the first year.

Row 9: **Allowed miles per year:** Leasing companies typically limit the miles per year that a car can be driven. If a car is driven more than the allowed number of miles, an excess mileage fee is charged at the end of the lease on all miles above the number of allowed miles. This fee only applies to the lease-case.

Row 10: **Cost per mile once maximum mileage is exceeded:** This cost is charged per mile at the end of a lease for all miles above the maximum allowed miles per year (lease-case only).

4. **User Input – user enters numbers, no formulas:**

Row 13: **[B]uy with Loan or [L]ease?:** Enter either **"B" or "L"** to indicate "Buy with a loan" or "Lease", respectively. The entry in this cell impacts most of the calculations in Sections 4 and 5 below. So, as you fill in the formulas below, you can switch the entry in B13 frequently to test your formulas.

Row 14: **Negotiated Price:** The negotiated price is typically lower than the manufacturer suggested retail price (MSRP), also known as sticker price. Also, if the customer has a car to trade in, which effectively lowers the sales price of the new car, that deduction should also be reflected in the negotiated price. Typically, the price is negotiated in both cases: buy and lease.

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Row 15: **Interest Rate:** Enter the yearly interest rate that applies to the loan (buy-option) or the lease. Sometimes, dealers provide a money-factor in the case of a lease, which then has to be multiplied by 2400 to obtain the interest rate per year.

Row 16: **Term in Months:** Enter the term of the loan (buy-option) or lease in months.

Row 17: **Expected miles driven per year:** Enter the average amount of miles that the user expects to drive per year. In the current spreadsheet the expected miles per year, only affects the lease case, for simplicity reasons.

5. **Key results – uses cell references in the formulas to copy results from Section 5:**

Row 20: **Monthly payments:** The monthly payments are calculated below in row 41 and copied to here for easy comparison.

Row 21: **Total costs:** The total costs are calculated below in row 44 and copied here for easy comparison.

After reviewing the purpose and different parts of the worksheet, we are now ready to enter the formulas that are needed to calculate the monthly and yearly payments for the buy and lease options. As you work through the worksheet, compare your results with Figures G-6 (Buy-case, indicated by an entry of "B" in B13) and Figure G-7 (Lease-case, indicated by an entry of "L" in B13) below. Both figures also use the following user entries in Section 2:

- Negotiated price: $30,000
- Interest rate per year: 4%
- Term in months: 24
- Expected miles driven per year: 12,000

G.3 – Entering Formulas

You can compare your results as you go with Figures G-6 and G-7, later in this PDF.

6. **Row 24: Sales tax:** Start by calculating the sales tax on the negotiated price for the car. This calculation only applies to the situation of **buy**, so it is recommended to use an IF-function, as follows:

- Logical Test: Check the entry in B13 for "B"[1].
- Value if true: If the test comes back true (i.e., the entry in B13 is "B"), then calculate sales tax as the product of negotiated price and NC Sales tax. Make sure to use cell references.
- Value if false: If the test comes back false (i.e., the entry in B13 is not "B"), write "N/A".
- Test whether your IF-function works properly by switching the entry in B13 from "B" to "L"

To get you started your first formula should be:

```
=IF(B13 = "B", B14*B7,"N/A")
```

Figure G-3: Formula for Sales Tax Calculation

[1] You can also test for "L", in which case the values for true and false must be reversed. Both approaches are correct and have the same result.

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7. **Row 25: Total loan:** The total amount of the loan in the buy-case is calculated as the sum of the negotiated price, sales tax, and fees for title, tag, and registration. However, like Row 24 this calculation only applies in the case of a buy, which can again be calcuated with the use of an IF-function as follows:

    - Logical Test: Check the entry in B13 for “B”.
    - Value if true: Calculate the total loan amount by adding negotiated price, sales tax and tag, title and registration fees.
    - Value if false: Write “N/A”
    - Test by switching the value in B13 from “B” to “L” or vice versa.
    - ***Please notice the use of the quotes (“) when you are referring to characters like B or L and not Cell References. Cell references should be used if using a specific cell’s values (for example, the negotiated price).***

Note: You just entered a function, namely the IF-function, such that it contains another function, namely a SUM-function (or simple addition if you didn’t use SUM). In case you wondered, the “=”-sign only needs to be entered only once at the very beginning of the main function, but not at the beginning of the subsequent embedded functions.

At this point, you probably start to realize that Excel is very powerful because it allows combining and embedding functions in many different ways. It is, however, very important to test these more complex entries thoroughly to make sure they work as intended! In this assignment, we will use the possibility of embedding one function (or several) in another one repeatedly.

8. **Row 26: Total cost of car (lease only)**: The total costs of the leased car are calculated as the negotiated price plus the lease acquisition fee. Similar to rows 24 and 25, use an IF-function to test cell B13 for the indicator of “B” versus “L”, then write “N/A” in the case of a buy, and calculate the total costs of car in the case of lease. (add two cells, no SUM needed).

9. **Row 27**: **Monthly interest rate in %:** Calculate the monthly interest rate by dividing the yearly interest rate by 12. This calculation applies to both buy and lease, so no IF-function is needed.

10. **Row 28: Yearly depreciation in $:** Calculate the yearly depreciation in $ by multiplying the negotiated price with the depreciation per year (found in Constants). For the depreciation, make a reference to the appropriate cell in the constants section. This calculation applies to both buy and lease, so no IF-function is needed.

11. **Row 29: Term in years:** The term in years is calculated as the term in months divided by 12. Note that not all terms add up to “full years”, that is the result here may contain a decimal.

12. **Row 30: Total depreciation over the entire term, in $:** Multiply the yearly depreciation in $ with the length of the term in years to obtain the total depreciation over the entire term, in $. However, you must make sure that the total depreciation does not exceed the negotiated price. Therefore, this cell with an IF to determine if Depreciation per year * years is less than the negotiated price. If it is (true case) the total depreciation is depreciation per year * years, otherwise (the false case). It is the negotiated price.

13. **Row 31: Residual value at the end of the term:** Subtract the total depreciation from the negotiated price to obtain the residual value at the end of term. The calculation apples to both B and L (thus no IF)

14. **Row 32: Total miles allowed (lease):** Calculate the total miles allowed by multiplying the allowed miles per year with the length of the term in years. As this calculation only applies to the lease case, use the IF-function to write “N/A” for the buy-case, like what you did above (Row 24 etc.)

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15. **Row 33: Total miles expected:** Multiply the expected miles per year with the length of the term in years. Since this calculation only applies for the lease-case, use an IF-function to write “N/A” for the buy-case.

16. **Row 34: Miles remaining at the end of the lease:** Calculate the miles remaining at the end of the lease as the difference between the total miles allowed and the total miles expected over the term of the lease. This number becomes negative once the maximum mileage is exceeded (which we want to avoid). Since the calculation only applies to the lease-case, use the IF-function to write “N/A” for the buy case.

    Hint: this is our first formula that needs multiple IF functions in one cell. Basically, you first need to ask if it is a Lease and then also ask if the miles driven exceeds the miles allowed. You can put one IF function inside another IF function as shown in Figure G-4.

    ```
    =IF(B13="L", IF(B33>B32,B33-B32,0),"N/A")
    ```

    Figure G-4: Multiple IF functions

    Let’s break apart the above formula:

    - First you test if B13 is “L”, (lease case only)
    - Normally we then type what to do if the test is true; however, in this case if it is a lease then we must ask if the miles driven (B33) exceeds the miles allowed (B32). If that is true, then we subtract to get the excess mileage, and if we have not exceeded our allowance, then our excess miles for the lease case is zero.
    - Finally, the false case for the first test is N/A, because this does not apply to the B case.

17. **Row 35: Excess mileage fee:** To calculate the excess mileage fee, you multiply the number of excess miles with the excess mileage fee. This calculation, however, only has to be performed in the lease-case, so an IF-function is required to write “N/A” for the buy case.

18. **Row 36: Loan payments per month (buy):** The loan payments per month are determined by the interest rate, the length of the loan (term) and the principal value. Since we assume equal payments over the entire length of the loan, we can use Excel’s PMT-function.

    Like in Row 34, we will have two IF functions, the first to determine if it is the Buy option and then one for the PMT calculation. However, it is easier to use the Wizard to help us with our first PMT function. (see next page for the Figure)

    The PMT-function [**=PMT(Interest Rate, Term, Principal Value**)] calculates equal payments of a loan (principal value) over the length of a term at a given interest rate, whereby the term is the number of payments to be made.

    Begin by clicking in Cell B13 and typing a = (equal sign). Then click the symbol in the tool bar next to where the formula normally appears. Finally type PMT in the Select a Function Area. You should see Figure G-5 which provides you some hints of what to put in each box.

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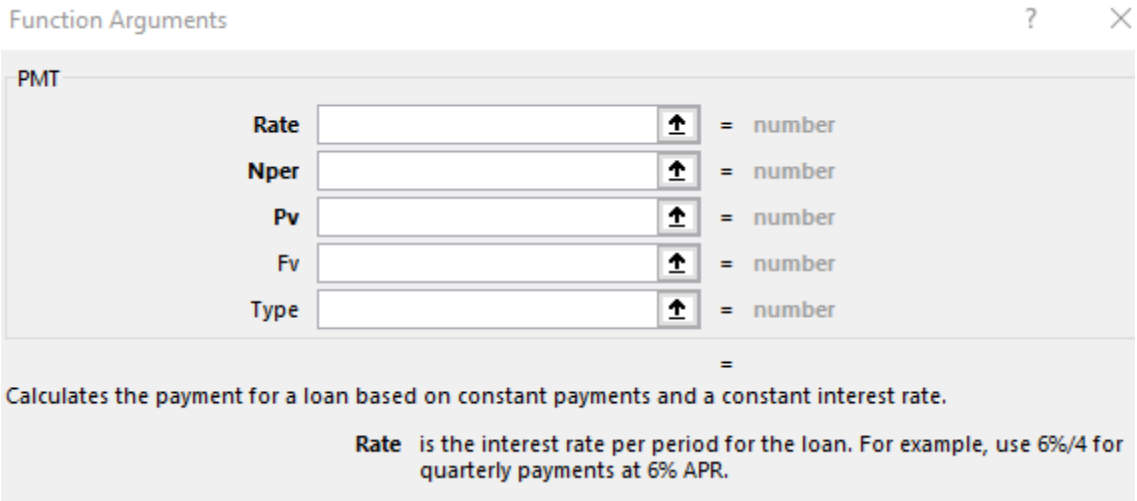

Figure G-5: Wizard Screen for Payment (PMT)

Our first entry (Rate) is the rate in terms of monthly payments, refer to the cell that has the monthly interest rate in it as a calculation.

Our second entry Nper (Number of Periods) is the number of months, find the cell that has the total number of months and refer to that cell here.

Finally, the Pv (Present Value) is the amount of the loan for the purchase, find that cell for the buy option and refer to that cell address here.

We do not need any entries in the last two boxes in the PMT function wizard. **Note <u>DO NOT</u> place entries like 24 or 33% in your entries above, use the cell references instead to provide maximum flexibility.**

In accordance with accounting standards, PMT results in a negative number (=payment), so in our spreadsheet the PMT-calculation needs to be multiplied by minus one. Place *-1 after the last) in the PMT function

Similar to what we did in Row 34, we have to embed the PMT-function inside an IF-function to ensure that the PMT-calculation is only made in the buy-case. In case of a lease where the loan payments don't apply, we write "N/A" as the false case for the IF. Therefore make the entire PMT function the true case for your IF statement which asks if B13 is Buy, and "N/A" the false case for the IF.

19. **Row 37: Lease payments net per month:** The monthly lease payments are calculated similar to the loan payments for the buy case (Row 36). Again, we can use the PMT-function, and we also use the same monthly interest rate and term in months as for the loan payments. For the principal value, however, we only use the difference between the Total Costs of the Car for a lease (calculated in Row 26), and the Residual Value (Row 31).

    Multiply again with -1 to account for the fact that the PMT-function results in a negative value.

    Given that the lease payments only apply to the lease case, this PMT function should also be embedded in an IF-function, such that "N/A" appears in the buy-case.

20. **Row 38: Lease payments plus sales tax per month:** Sales tax needs to be applied to the lease payments. Remember that the tax rate is provided in the constants section.

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Use an IF-function, such that the monthly lease payments plus sales tax are only calculated in the case of a lease, and “N/A” appears in the buy-case.

21. **Totals:** Now that we are done with the various calculations, we can determine the total payments in section 5:

    Row 41: Monthly payment: In Section 4, we calculated both the Loan Payments per Month (buy case) and the Lease Payments plus Sales Tax per Month (lease case).

    So, in row 41, we use an IF-function that checks B13 and depending on the user entry copy either the loan payments per month from Row 36 (buy case), or the lease payments plus sales tax per month from Row 38 (lease case).

    Row 42: Excess mileage payment at the end of the lease: Again, the value to be entered here has already been calculated earlier. It merely needs to be copied here.

    Row 43: Buy car from dealer at the end of the lease period: In order to improve comparability between the lease and buy-options, we assume that the customer buys the car from the dealer at the end of the lease. So, using an IF-function, copy the residual value at the end of the term from section 4 in case of a lease and write “N/A” for the buy-case.

    Row 44: Total payments: The total payments are calculated as the sum of all payments over the total length of the contract (buy or lease, don’t forget to multiply w/term in months!), excess mileage fees, and final payment to buy the car at the end of a lease.

    Compare your results to Figures G6 and G7 shown on the following pages.

22. Return to Section 3 (**Key Results**).

    Row 20: Monthly Payment should equal the equivalent cell in Section 5. This should be entered as a cell reference.

    Row 21: Total Cost of The Car: should equal the equivalent cell in Section 5. This should be entered as a cell reference.

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1	**Buy a car with a loan, or lease it?**	
2	Note: This analysis ignores the time value of money	
3		
4	**1. Constants**	
5	Tag, title, registration fees (buy only)	$100.00
6	Lease acquisition fees (lease only)	$300.00
7	NC Sales tax (buy and lease)	3%
8	Depreciation of a car in percent per year (buy and lease)	20%
9	Allowed miles per year (lease only)	10,000
10	Cost per mile once maximum mileage is exceeded (lease only)	$0.10
11		
12	**2. User input**	
13	[B]uy with Loan or [L]ease?	B
14	Negotiated price (after dealer discounts)	$30,000.00
15	Interest rate per year	4%
16	Term in months	24
17	Expected miles driven per year	12,000
18		
19	**3. Key Results**	
20	Monthly payments	$1,346.17
21	Total cost of the car	$32,308.14
22		
23	**4. Calculations**	
24	Sales tax on car purchase (buy only)	$900.00
25	Total loan (buy only)	$31,000.00
26	Total costs of car (lease only)	N/A
27	Monthly interest rate (buy and lease)	0.33%
28	Yearly depreciation in $ (buy and lease)	$6,000.00
29	Term in years (buy and lease)	2.0
30	Total depreciation over the entire term, in $ (buy and lease)	$12,000.00
31	Residual value at the end of the term (buy and lease)	$18,000.00
32	Total miles allowed (lease only)	N/A
33	Total miles expected over the entire term (lease only)	N/A
34	Miles remaining at the end of the term (lease only)	N/A
35	Excess mileage fees (lease only)	N/A
36	Loan payments per month (buy only)	$1,346.17
37	Lease payments net per month (lease only)	N/A
38	Lease payments plus sales tax per month (lease only)	FALSE
39		
40	**5. Totals**	
41	Monthly payment (buy and lease)	$1,346.17
42	Excess mileage payment at the end of the lease (lease only)	N/A
43	Buy car from dealer at end of lease period (lease only)	N/A
44	Total payments (buy and lease)	$32,308.14

Figure G-6 Completed Worksheet for the Buy Case (indicated by "B" as user input in B13)

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1	**Buy a car with a loan, or lease it?**	
2	Note: This analysis ignores the time value of money	
3		
4	**1. Constants**	
5	Tag, title, registration fees (buy only)	$100.00
6	Lease acquisition fees (lease only)	$300.00
7	NC Sales tax (buy and lease)	3%
8	Depreciation of a car in percent per year (buy and lease)	20%
9	Allowed miles per year (lease only)	10,000
10	Cost per mile once maximum mileage is exceeded (lease only)	$0.10
11		
12	**2. User input**	
13	[B]uy with Loan or [L]ease?	L
14	Negotiated price (after dealer discounts)	$30,000.00
15	Interest rate per year	4%
16	Term in months	24
17	Expected miles driven per year	12,000
18		
19	**3. Key Results**	
20	Monthly payments	$550.15
21	Total cost of the car	$31,603.61
22		
23	**4. Calculations**	
24	Sales tax on car purchase (buy only)	N/A
25	Total loan (buy only)	N/A
26	Total costs of car (lease only)	$30,300.00
27	Monthly interest rate (buy and lease)	0.33%
28	Yearly depreciation in $ (buy and lease)	$6,000.00
29	Term in years (buy and lease)	2.0
30	Total depreciation over the entire term, in $ (buy and lease)	$12,000.00
31	Residual value at the end of the term (buy and lease)	$18,000.00
32	Total miles allowed (lease only)	20,000
33	Total miles expected over the entire term (lease only)	24,000
34	Miles remaining at the end of the term (lease only)	4,000
35	Excess mileage fees (lease only)	$400.00
36	Loan payments per month (buy only)	N/A
37	Lease payments net per month (lease only)	$534.13
38	Lease payments plus sales tax per month (lease only)	$550.15
39		
40	**5. Totals**	
41	Monthly payment (buy and lease)	$550.15
42	Excess mileage payment at the end of the lease (lease only)	$400.00
43	Buy car from dealer at end of lease period (lease only)	$18,000.00
44	Total payments (buy and lease)	$31,603.61

Figure G-7 Completed Worksheet for the Lease Case (indicated by "L" as user input in B13)

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G.4 – Creating the Scenario Manager Analysis

23. Now that we have completed the worksheet and made all the calculations, we are ready to use Excel's Scenario Manager to compare the following four scenarios:

    1. Buy the car with a loan, while expecting to drive 10,000 miles per year (low mileage)
    2. Buy the car with a loan, while expecting to drive 50,000 miles per year (high mileage)
    3. Lease the car, while expecting to drive 10,000 miles per year (low mileage)
    4. Lease the car, while expecting to drive 50,000 miles per year (high mileage)

24. At this point it is irrelevant what **user input values** have been entered into rows 13 and 17, but please, check your values in rows 14 to 16 to be:

    - Negotiated price: $30,000
    - Interest rate (year): 4%
    - Terms in months: 24

25. To use Scenario Manager, select **Data – Data Tools – What-if Analysis – Scenario Manager**. If you forgot how to use Scenario Manager, refer to the Scenario Manager Tutorial.

26. For this Scenario Analysis you will have two changing cells for this Scenario, as both the mileage and the Buy versus Lease cells will change. You will also use the Key Result cells that are highlighted in green on your worksheet.

27. Create four scenarios and name them as follows

    - Buy - Low Mileage (to help you get started your changing cell values would be B and 10,000)
    - Buy – High Mileage (see step 23 for the rest of the values)
    - Lease – Low Mileage
    - Lease – High Mileage

28. Run your Summary Report and format your Scenario Summary sheet as shown in Figure G-8. Don't forget to delete the empty first row and first column, column B, as well as the current values column that are automatically generated by Excel when creating the Scenario Summary. Your output for all scenarios should match Figure G-8.

	A	B	C	D	E
1	Scenario Summary				
2		Buy - Low Mileage	Buy - High Mileage	Lease - Low Mileage	Lease - High Mileage
4	Changing Cells:				
5	[B]uy with Loan or [L]e	B	B	L	L
6	Expected miles driven	10,000	50,000	10,000	50,000
7	Result Cells:				
8	Monthly payments	$1,346.17	$1,346.17	$550.15	$550.15
9	Total cost of the car	$32,308.14	$32,308.14	$31,203.61	$39,203.61

Figure G-8: Scenario Summary for the Decision to Buy or Lease a Car

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G.5 – Graphing the Results (may be optional, check with instructor)

On your Scenario Summary Sheet and using the Chart Wizard (**Insert – Chart**), create a chart to plot the monthly payments and total costs using the data from the Scenario Summary. Refer to the headings in Row 2 as well as the data/titles in Rows 8 and 9 in Figure G-7.

Place your graph directly under the Scenario Summary. When done, compare your chart with Figure G-9 below, including title, series legends, data labels and x-axis labels.

Some instructions are given below, but if you need additional help using the Chart Wizard, please review the Excel Tutorial Project (Vintage Vinyl), Section E-5.

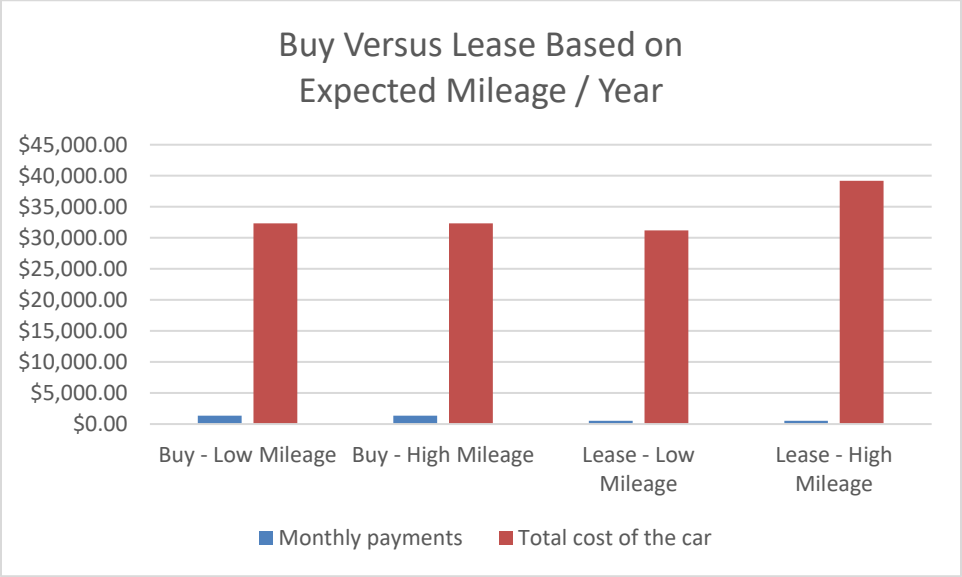

Figure G-9: Scenario Summary Chart with Title, Legends and Horizontal Axis Labels added

29. The easiest way to produce Figure G-9, is to hold the control key down and highlight Row 2 (from A to F) and while holding the control key down, highlight Rows 8 and 9. The only item to change would be the chart title.

G.6 – Interpreting the Results (may be optional, check with instructor)

Now that you are done with the worksheet calculations and presentation of the data, the final task is to interpret the results. Immediately below the chart, write a brief memo as follows:

a. Suggest what the customer should decide (buy a car or lease?) and why.

b. Point out the most important assumptions and simplifications that your calculations (and thus suggestion) are based upon. In other words, let the decision maker know how these assumptions and simplifications may have impacted the results.

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