**Excel Project 3 – What-If Analysis, Charting, and Working with Large Worksheets**

You must use Excel Online to complete this assignment. Go to portal.office.com and log-in to access Excel Online.
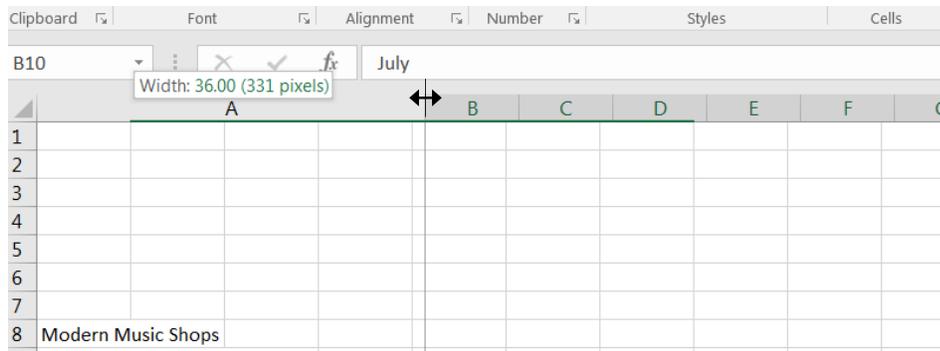*Do NOT use Google Sheets. No credit can be earned if Google Sheets are used.*
No credit can be earned if you do not have formulas, so follow directions carefully and closely.

1. Open a blank Excel spreadsheet

2. Save the spreadsheet as Excel Project 3 Modern Music Shops

3. Select cell A8 and then type Modern Music Shops as the worksheet title

4. Select cell A9 and then type Six-Month Financial Projection as the worksheet subtitle and then press the Enter key

5. In cell B10 type July and then click the Enter box.

6. Be sure cell B10 is still selected, and then click the Alignment Settings button to open the dialog box. See image below to help you. **If Excel Online does not have this feature, skip to step 10.**
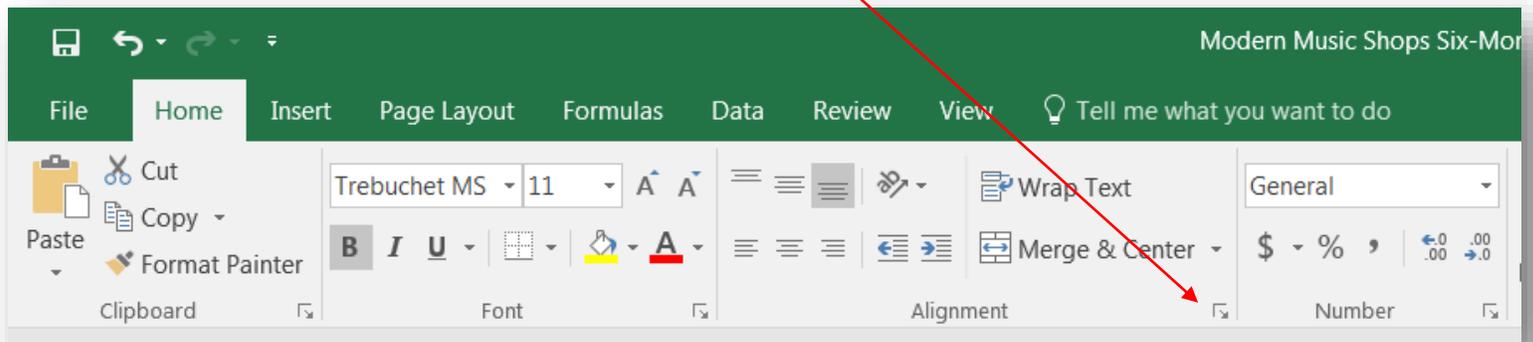
7. The Alignment Settings dialog box should open.

8. Change the orientation (far right of the dialog box) to 45 degrees. See the image on the next page to help you.

9. Save your changes (CTRL + S)

10. Use your fill handle to copy the remaining months (August through December) to the range C10:G10. Your spreadsheet should then look like the image below. Save changes.

11. Increase the width of column A to 36.00 (331 pixels). See the image below to help you.

12. In cell H10, type the word Total. In cell I10, type the word Chart.   Format these cells so that the text is at a 45-degree angle.

13. Use the image below to type in the row titles for the column A. For the titles that are indented, use your increase indent button on the Home tab.

Data	Review	View	Tell m

7		
8	Modern Music Shops	
9	Six-Month Financial Projection	
10		July
11	Revenue	
12	Cost of Goods Sold	
13	Gross Margin	
14		
15	Expenses	
16	Bonus	
17	Commission	
18	Marketing	
19	Research and Development	
20	Support, General, and Administrative	
21	Total Expenses	
22		
23	Opertating Income	
24		
25		

14. In cell A1, type What-If Assumptions

15. In the range A2:A6, you will copy and paste the information from the range A16:A20. See the image on the next page.

	A	B
1	What-If Assumptions	
2	Bonus	
3	Commission	
4	Marketing	
5	Research and Development	
6	Support, General, and Administrative	
7		
8	Modern Music Shops	
9	Six-Month Financial Projection	
10		July
11	Revenue	
12	Cost of Goods Sold	
13	Gross Margin	
14		
15	Expenses	
16	Bonus	
17	Commission	
18	Marketing	
19	Research and Development	
20	Support, General, and Administrative	
21	Total Expenses	
22		

16. If your spreadsheet matches the image to the left, save changes.

17. Right click on Row 4. Choose Insert from the Menu. In the new row you just inserted, type Margin

18. Right click on Row 7. Choose Insert from the Menu. In the new row you just inserted, type Sales Revenue for Bonus

19. Check your spreadsheet with the image on the next page, then save changes.

A7	:	×	✓	fx	Sales Revenue for Bonus			

	A	B	C	D	E
1	What-If Assumptions				
2	Bonus				
3	Commission				
4	Margin				
5	Marketing				
6	Research and Development				
7	Sales Revenue for Bonus				
8	Support, General, and Administrative				
9					
10	Modern Music Shops				
11	Six-Month Financial Projection				
12		July	August	September	October
13	Revenue				
14	Cost of Goods Sold				
15	Gross Margin				
16					
17	Expenses				
18	Bonus				
19	Commission				
20	Marketing				
21	Research and Development				
22	Support, General, and Administrative				
23	Total Expenses				
24					

20. Select cell B13 and enter 3113612.16 in cell B13, 7962235.53 in cell C13, 5112268.58 in cell D13, 2924627.87 in cell E13, 7630534.65 in cell F13, and 3424270.23 in cell G13.

21. Use AUTOSUM to find the total for row 13. The total should appear in cell H13. Save changes.

22. Click cell I11 and then click the Insert Function box in
     the formula bar to display the Insert Function dialog box.
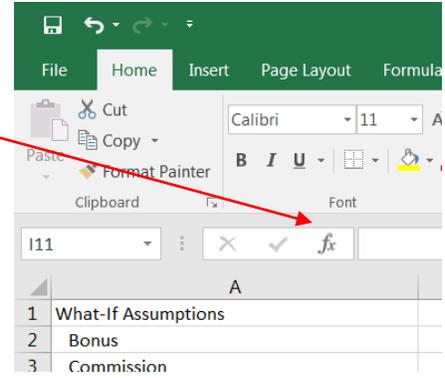
23. When the Insert Function dialog box opens, choose Date & Time from the Or select a category: drop down menu.
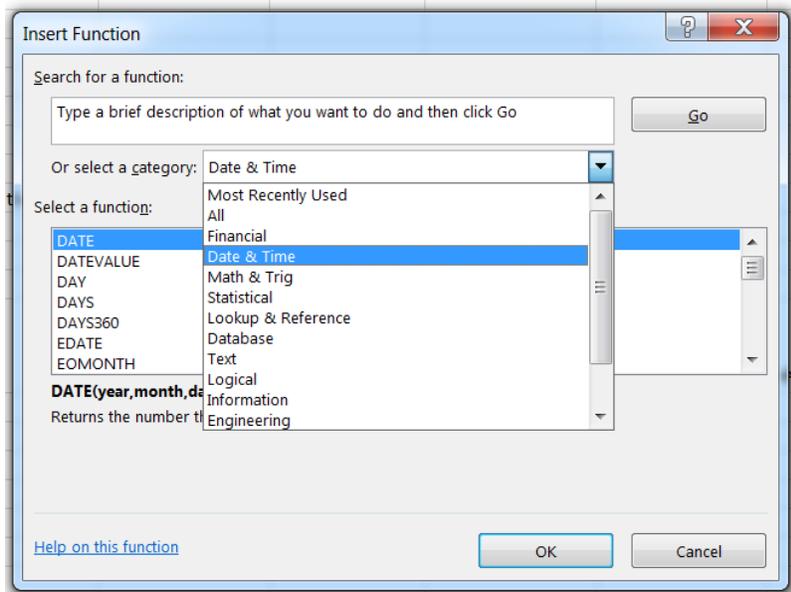
24. Scroll down in the list and choose Now. Click OK. Click OK if you get Functional Argument box.

25. Right on cell I11. Choose Format Cells from the menu. Then click Date. Then choose the option in the list that says 3/14/12. Click OK. Save changes.

26. In the What-If Assumptions area of the spreadsheet, enter the following values for each assumption:

	A	B
1	What-If Assumptions	
2	Bonus	200,000.00
3	Commission	5.75%
4	Margin	57.50%
5	Marketing	15%
6	Research and Development	7.50%
7	Sales Revenue for Bonus	3,500,000.00
8	Support, General, and Administrative	18.75%
9		
10	Modern Music Shops	

27. Save changes.

28. In cell B14, you will enter a formula with an absolute cell reference. *An absolute cell reference is a cell reference in a spreadsheet that remains constant even if the spreadsheet shape or size changes, or the reference is copied or moved to another cell or sheet.* The formula for B14 is =B13*(1-$B$4)

    The dollar signs in the formula above let you know that B4 is the absolute cell reference.

29. In cell B15, type =B13-B14

30. In cell B18, you will enter an IF function. *An IF function is useful when you want to assign a value to a cell based on a logical test.* In cell B18, enter =IF(B13>=$B$7,$B$2,0)

31. In cell B19, type =B13*B3 then press the F4 key on your keyboard. The F4 key will automatically change B3 to B3, an absolute cell reference. Press Enter.

32. In cell B20, type =B13*B5 then press F4. Press Enter.

33. In cell B21, type =B13*B6 then press F4. Press Enter.

34. In cell B22, type =B13*B8 then press F4. Press Enter.

35. In cell B23, use AUTOSUM to find the total for Total Expenses.

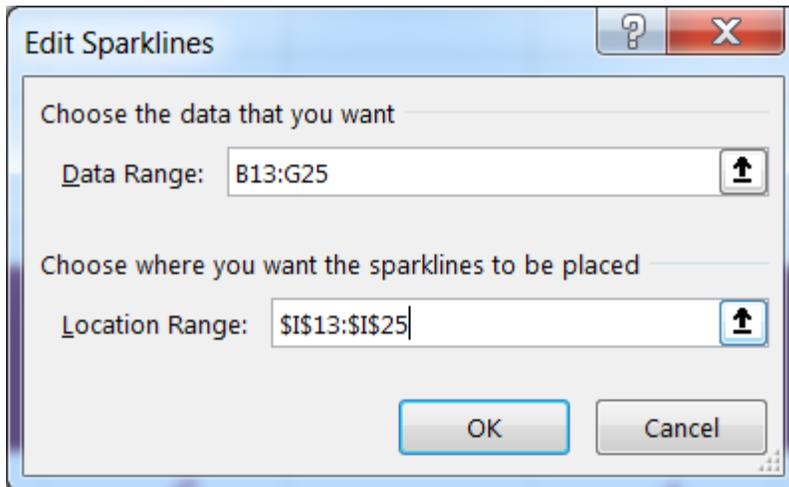36. In cell B25, type =B15-B23 then save changes. Your spreadsheet should look similar to the image below.

	A	B	C	D	E	F	G	H	I
1	What-If Assumptions								
2	Bonus	200,000.00							
3	Commission	5.75%							
4	Margin	57.50%							
5	Marketing	15%							
6	Research and Development	7.50%							
7	Sales Revenue for Bonus	3,500,000.00							
8	Support, General, and Administrative	18.75%							
9									
10	Modern Music Shops								
11	Six-Month Financial Projection								8/26/2017 9:33
12		July	August	September	October	November	December	Total	Chart
13	Revenue	3113612.16	7962235.53	5112268.58	2924627.87	7630534.65	3424270.23	30167549.02	
14	Cost of Goods Sold	1323285.168							
15	Gross Margin	1790326.992							
16									
17	Expenses								
18	Bonus	0							
19	Commission	179032.6992							
20	Marketing	467041.824							
21	Research and Development	233520.912							
22	Support, General, and Administrative	583802.28							
23	Total Expenses	1463397.715							
24									
25	Opertating Income	326929.2768							
26									
27									

Sheet1

37. Use your fill handle to copy the formulas from the range B14:G25. See image on next page.

	A	July	August	September	October	November	December	Total	Chart
9									
10	Modern Music Shops								
11	Six-Month Financial Projection								8/26/2017 9
12		July	August	September	October	November	December	Total	Chart
13	Revenue	3113612.16	7962235.53	5112268.58	2924627.87	7630534.65	3424270.23	30167549.02	
14	Cost of Goods Sold	1323285.168	3383950.1	2172714.147	1242966.845	3242977.226	1455314.848		
15	Gross Margin	1790326.992	4578285.43	2939554.434	1681661.025	4387557.424	1968955.382		
16									
17	Expenses								
18	Bonus	0	200000	200000	0	200000	0		
19	Commission	179032.6992	457828.543	293955.4434	168166.1025	438755.7424	196895.5382		
20	Marketing	467041.824	1194335.33	766840.287	438694.1805	1144580.198	513640.5345		
21	Research and Development	233520.912	597167.6648	383420.1435	219347.0903	572290.0988	256820.2673		
22	Support, General, and Administrative	583802.28	1492919.162	958550.3588	548367.7256	1430725.247	642050.6681		
23	Total Expenses	1463397.715	3942250.699	2602766.233	1374575.099	3786351.286	1609407.008		
24									
25	Opertating Income	326929.2768	636034.7306	336788.2009	307085.9264	601206.1383	359548.3742		
26									
27									

38. Save your changes.

39. Select cell H13 and use your fill handle to copy the formula to H14:H15.

40. Select cell H18 and use AUTOSUM to find the total for row 18. Copy the formula to the range H19:H23.

41. Select cell H25 and use AUTOSUM to find the total for row 25. Save changes. See image below if needed.

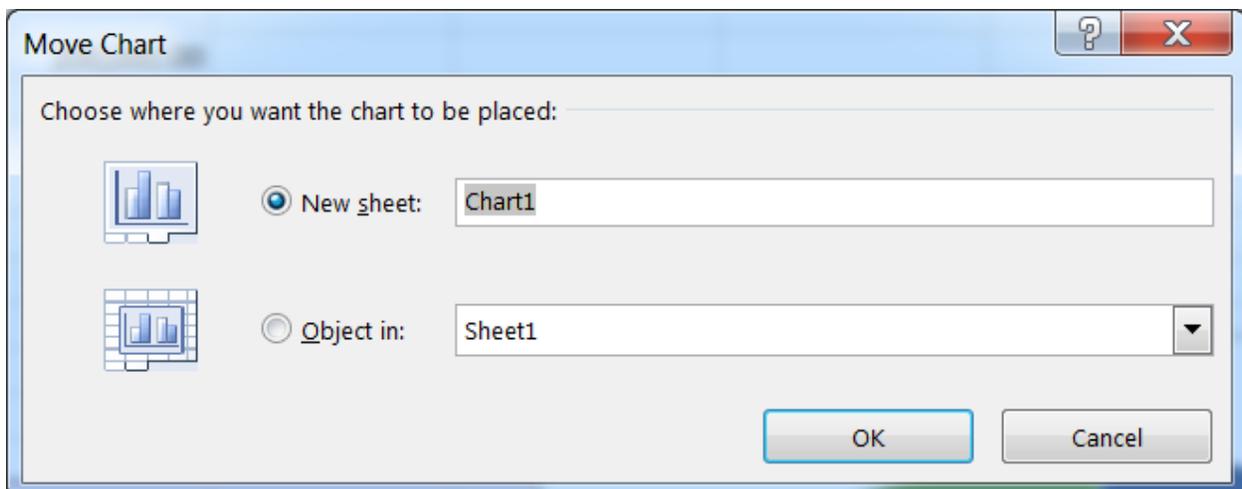| H25		⨯ ✓ fx	=SUM(B25:G25)					
	A	B	C	D	E	F	G	H	I
1	What-If Assumptions								
2	Bonus	200,000.00							
3	Commission	5.75%							
4	Margin	57.50%							
5	Marketing	15%							
6	Research and Development	7.50%							
7	Sales Revenue for Bonus	3,500,000.00							
8	Support, General, and Administrative	18.75%							
9									
10	Modern Music Shops								
11	Six-Month Financial Projection								8/26/2017 9:41
12		July	August	September	October	November	December	Total	Chart
13	Revenue	3113612.16	7962235.53	5112268.58	2924627.87	7630534.65	3424270.23	30167549.02	
14	Cost of Goods Sold	1323285.168	3383950.1	2172714.147	1242966.845	3242977.226	1455314.848	12821208.33	
15	Gross Margin	1790326.992	4578285.43	2939554.434	1681661.025	4387557.424	1968955.382	17346340.69	
16									
17	Expenses								
18	Bonus	0	200000	200000	0	200000	0	600000	
19	Commission	179032.6992	457828.543	293955.4434	168166.1025	438755.7424	196895.5382	1734634.069	
20	Marketing	467041.824	1194335.33	766840.287	438694.1805	1144580.198	513640.5345	4525132.353	
21	Research and Development	233520.912	597167.6648	383420.1435	219347.0903	572290.0988	256820.2673	2262566.177	
22	Support, General, and Administrative	583802.28	1492919.162	958550.3588	548367.7256	1430725.247	642050.6681	5656415.441	
23	Total Expenses	1463397.715	3942250.699	2602766.233	1374575.099	3786351.286	1609407.008	14778748.04	
24									
25	Opertating Income	326929.2768	636034.7306	336788.2009	307085.9264	601206.1383	359548.3742	2567592.647	
26									
27									

42. Select cell I13. Click Insert. Then choose Line (on the right). When the Edit Sparklines dialog box opens, enter the information seen below. Please enter this information carefully and accurately. *(The line you see next to the 5 is the insertion point from the screen shot. You do not have to type this character.)* Then click OK.

Edit Sparklines

Choose the data that you want

Data Range: B13:G25

Choose where you want the sparklines to be placed

Location Range: $I$13:$I$25

OK   Cancel

If Excel Online does not have this feature, skip to Step 43. Your spreadsheet may then not have sparklines in Column I. This will not affect your score on this assignment.

43. Select the range B12:G12. Hold down your CTRL button on your keyboard and then select the range B25:G25. Holding down CTRL allows you to select two non-adjacent ranges.
44. Click Insert. Then choose Insert Pie or Doughnut Chart. Choose 3-D pie chart.

45. When the 3-D pie chart appears in the middle of your spreadsheet, click Move Chart on the Design tab (far right) to display the Move Chart dialog box. Select the first option New Sheet and then click OK.

Move Chart

Choose where you want the chart to be placed:

New sheet: Chart1

Object in: Sheet1

OK   Cancel

46. Your chart should now be on its own sheet in your workbook. Save changes.

47. Click on the words Chart Title above the chart. Change the title to Six-Month Financial Projection

48. Be sure your chart is selected. Click Design on the Chart Tools ribbon. Click Quick Layout (on the left) and then choose Layout 1. You should see the months and corresponding percentages on each piece of the pie chart.

49. Click on the August slice and drag so that it is separate from the others. See image below.

50. Click and drag each month and percentage so that the text is next to each piece of the pie chart. See image below.
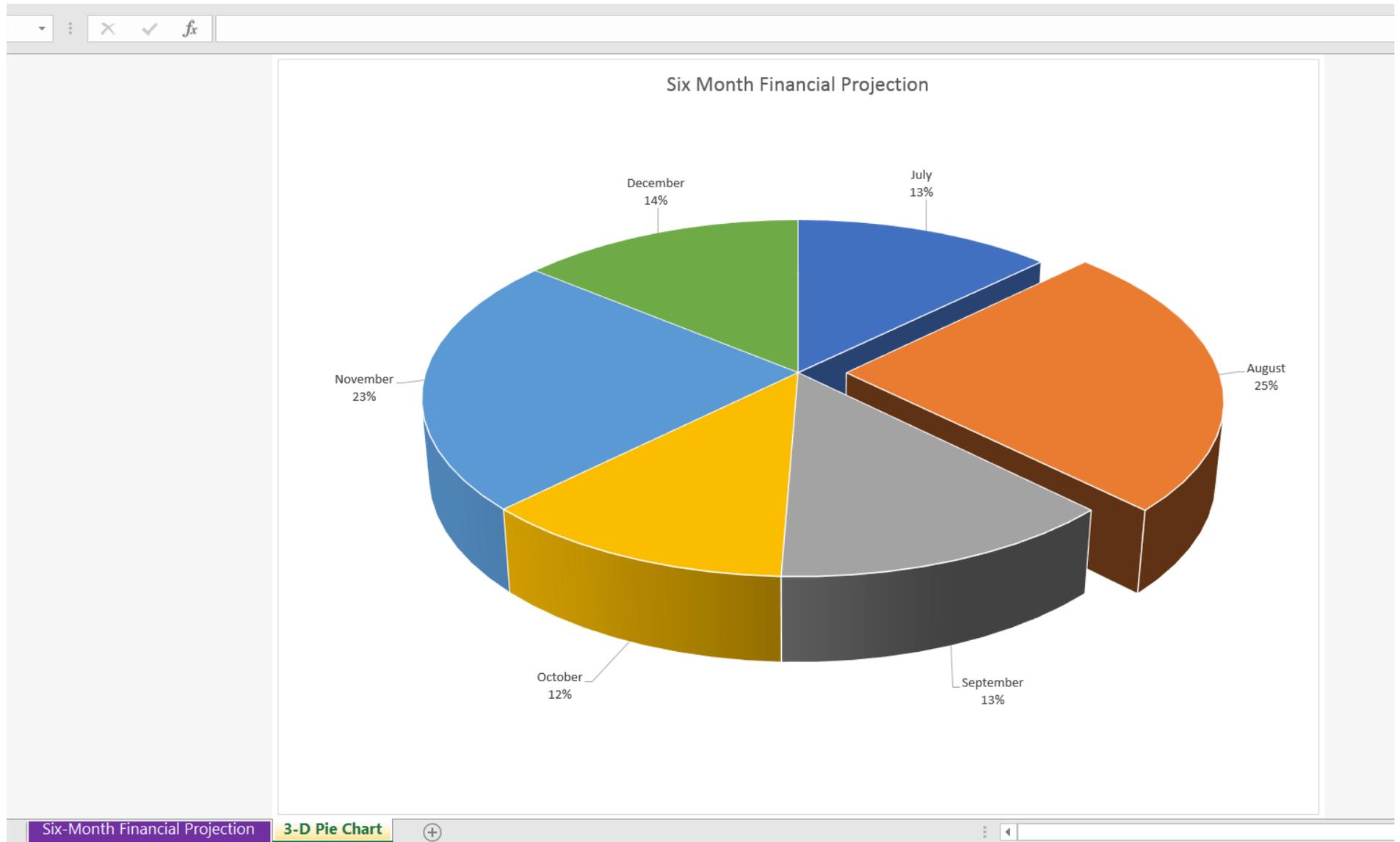

Six Month Financial Projection
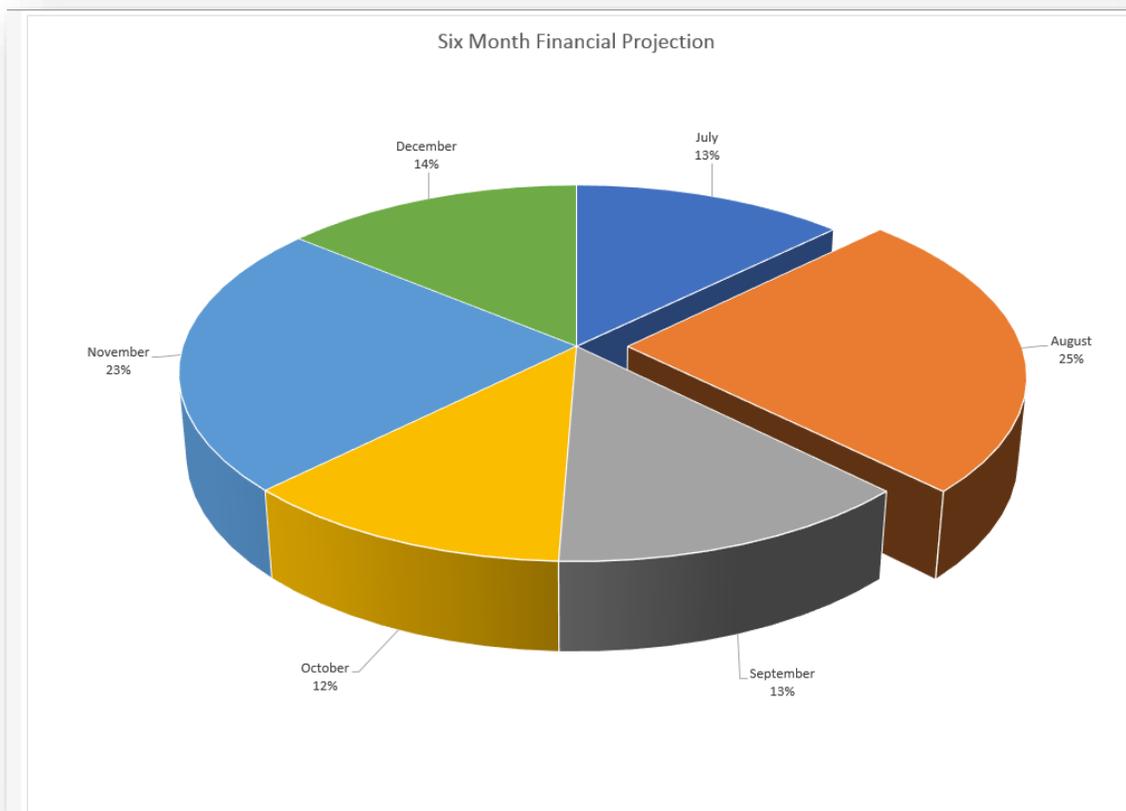
51. Click on the Chart 1 tab (bottom left) and click to drag it to the right of the Sheet 1 tab.

52. Right click on Chart 1 tab, click rename, and then type 3-D Pie Chart and then press Enter. Right click on 3-D Pie Chart tab, click Tab Color and choose orange.

53. Right click on Sheet 1 tab, click rename, and then type Six-Month Financial Projection and then press Enter. Right click on Six-Month Financial Projection tab, click Tab Color and choose purple. Save changes.

54. Be sure the Six-Month Financial Projection spreadsheet is displayed. You will know format the spreadsheet different fonts, colors, and sizes.

55. Select cell A10. Change the font size to 36.

56. Select cell A11. Change the font size to 18.

57. Press CTRL + Home to select cell A1

58. Change the font to size 8, italics, and underline

59. Select the range A2:B8, and change the font to size 8.

60. Select the range A1:B8 and then click the Fill Color button and choose purple. Then change the font color to white.

61. Select the range A10:I11. Change the Fill Color to purple. Change the font color to white.

62. Select cell A13, hold down CTRL key, and click A15. Change the Fill Color to purple. Change the font color to white and bold.

63. Select the range A25:H25. Change the Fill Color to purple. Change the font color to white and bold.

64. Select the range B13:H13, hold down CTRL key, select the range B15:H15, hold down CTRL key, select the range B23:H23, hold down CTRL key, and select the range B25:H25. On the Number area of the Home ribbon, change General to Currency to apply Currency formatting to the non-adjacent selected rows.
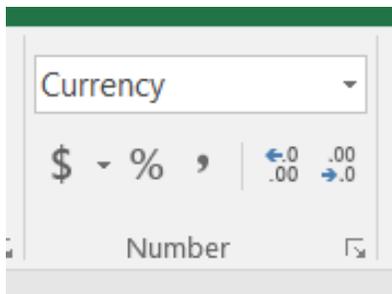
65. Select the range A12:I12 and choose Heading 3 from the Styles menu list on the Home tab. With the range still selected, click the Borders button on the Home Tab

66. Select the range B15:I15, hold down CTRL key, and select the range A23:I23. Apply the Total style from the Styles menu list on the Home tab.

67. Save changes. Check the next two pages to be sure your spreadsheet and chart look like those shown here.

A27

	A	B	C	D	E	F	G	H	I	J
1	*What-If Assumptions*									
2	Bonus	200,000.00								
3	Commission	5.75%								
4	Margin	57.50%								
5	Marketing	15%								
6	Research and Development	7.50%								
7	Sales Revenue for Bonus	3,500,000.00								
8	Support, General, and Administrative	18.75%								
9										
10	**Modern Music Shops**									
11	Six-Month Financial Projection								8/27/17	
12		July	August	September	October	November	December	Total	Chart	
13	**Revenue**	$3,113,612.16	$7,962,235.53	$5,112,268.58	$2,924,627.87	$7,630,534.65	$3,424,270.23	$30,167,549.02		
14	Cost of Goods Sold	1323285.168	3383950.1	2172714.147	1242966.845	3242977.226	1455314.848	12821208.33		
15	**Gross Margin**	**$1,790,326.99**	**$4,578,285.43**	**$2,939,554.43**	**$1,681,661.03**	**$4,387,557.42**	**$1,968,955.38**	**$17,346,340.69**		
16										
17	Expenses									
18	Bonus	0	200000	200000	0	200000	0	600000		
19	Commission	179032.6992	457828.543	293955.4434	168166.1025	438755.7424	196895.5382	1734634.069		
20	Marketing	467041.824	1194335.33	766840.287	438694.1805	1144580.198	513640.5345	4525132.353		
21	Research and Development	233520.912	597167.6648	383420.1435	219347.0903	572290.0988	256820.2673	2262566.177		
22	Support, General, and Administrative	583802.28	1492919.162	958550.3588	548367.7256	1430725.247	642050.6681	5656415.441		
23	Total Expenses	**$1,463,397.72**	**$3,942,250.70**	**$2,602,766.23**	**$1,374,575.10**	**$3,786,351.29**	**$1,609,407.01**	**$14,778,748.04**		
24										
25	**Opertating Income**	**$326,929.28**	**$636,034.73**	**$336,788.20**	**$307,085.93**	**$601,206.14**	**$359,548.37**	**$2,567,592.65**		
26										
27										
28										

Six-Month Financial Projection | 3-D Pie Chart

Six Month Financial Projection

July 13%

August 25%

September 13%

October 12%

November 23%

December 14%

Six-Month Financial Projection   **3-D Pie Chart**

If both parts of your spreadsheet look like the images above, call instructor over for screen check for grading.

Excel Project 3 – Lab 1

1. Open a blank workbook and save it as Lab 3-1 Med Supply Six Month Financial Projection

2. Use the image below to set up your spreadsheet. Use similar fonts, sizes, fill colors, etc. Remember, you should use a function for the date in cell G2. Save changes.

	A	B	C	D	E	F	G	H
	MED SUPPLY ONLINE WAREHOUSE							
1								
2	**Six-Year Financial Projection**						27-Aug-17	
3		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
4	Sales							
5	Cost of Goods							
6	Gross Margin							
7	**Expenses**							
8	Advertising							
9	Maintenance	1,605,000	4,378,000	5,920,000	5,050,000	3,200,000	4,250,000	
10	Rent	2,700,000						
11	Salaries							
12	Shipping							
13	Supplies							
14	Web Services	250,000						
15	**Total Expenses**							
16								
17	**Operating Income**							
18	Income Tax							
19	**Net Income**							
20								
21								
22	**Assumptions**							
23	Units Sold in Prior Year	1,589,712						
24	Unit Cost	$59.50						
25	Annual Sales Growth	4.50%						
26	Annual Price Decrease	3.80%						
27	Margin	38.80%						
28								
29								
30								

3. In cell B4, enter the formula =B23*(B24/(1-B27)) to find the Sales for Year 1

4. In cell B5, enter the formula =B4*(1-$B$27) to calculate the Cost of Goods

5. In cell B6, find the Gross Margin by entering the formula B4-B5

6. In cell B8, enter =500+8%*B4

7. In cell B11, enter =17%*B4

8. In cell B12, enter =3.9%*B4

9. In cell B13, enter +1.3%*B4

10. In cell B15, use AUTOSUM to find the total of the range B8:B14

11. In cell B17, enter =B6-B15 to find the operating income

12. In cell B18, use an IF Function for the Income Tax. Enter the formula =IF(B17<0,0,45%*B17)

13. In cell B19, find the net income by entering the formula =B17-B18. Save changes.

14. In cell C4, enter the formula =B4*(1+$B$25)*(1-$B$26) to find the Sales for Year 2. Notice how this formula takes into account the cost of goods from Year 1.

15. Be sure cell C4 is selected. Using your Fill Handle, copy the formula to D4:G4

16. Use your Fill Handle to copy the remaining formulas in Column B to Columns D through G.

17. In cell H4, insert a Sparkline Column chart (go to Insert – Sparklines group) for cell range B4:G4.

18. Repeat step 17 to insert Sparkline Column Chart in the cells H5:H6, H8:15, and H17:H19.

19. Use the non-adjacent ranges B3:G3 and B19:G19 to create a 3-D column chart on a new sheet.

20. Add the chart title Six-Year Net Income Projection

21. Rename Chart 1 as 3-D Column Chart. Change the tab color to orange.

22. Rename Sheet 1 as Six-Year Net Income Projection. Change the tab color to yellow.

23. Your finished Spreadsheet and Chart should look similar to the images below.

MED SUPPLY ONLINE WAREHOUSE

Six-Year Financial Projection   27-Aug-17

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Sales	154,555,333	155,372,931	156,194,854	157,021,125	157,851,766	158,686,802	
Cost of Goods	94,587,864	95,088,234	95,591,251	96,096,928	96,605,281	97,116,323	
Gross Margin	59,967,469	60,284,697	60,603,603	60,924,196	61,246,485	61,570,479	
Expenses							
Advertising	12,364,927	12,430,334	12,496,088	12,562,190	12,628,641	12,695,444	
Maintenance	1,605,000	4,378,000	5,920,000	5,050,000	3,200,000	4,250,000	
Rent	2,700,000	3,024,000	3,386,880	3,793,306	4,248,502	4,758,323	
Salaries	26,274,407	26,413,398	26,553,125	26,693,591	26,834,800	26,976,756	
Shipping	6,027,658	6,059,544	6,091,599	6,123,824	6,156,219	6,188,785	
Supplies	2,009,219	2,019,848	2,030,533	2,041,275	2,052,073	2,062,928	
Web Services	250,000	287,500	330,625	380,219	437,252	502,839	
Total Expenses	51,231,211	54,612,625	56,808,851	56,644,404	55,557,487	57,435,076	
Operating Income	8,736,259	5,672,072	3,794,752	4,279,792	5,688,998	4,135,403	
Income Tax	3,931,316	2,552,432	1,707,639	1,925,907	2,560,049	1,860,931	
Net Income	4,804,942	3,119,640	2,087,114	2,353,886	3,128,949	2,274,472	

Assumptions

Units Sold in Prior Year	1,589,712
Unit Cost	$59.50
Annual Sales Growth	4.50%
Annual Price Decrease	3.80%
Margin	38.80%

Six Year Financial Projection

Six-Year Financial Projection   3-D Column Chart