# **Excel\_8F\_Smoothie\_Costs**

## **Project Description:**

In this Project, you will use Solver to create several scenarios for how much of each of the three ingredients—strawberries, bananas, and avocados—to include in the smoothies at the new seasonal prices to maintain a profit margin of 35 percent. You will also use Excel functions.

## **Steps to Perform:**

| **Step** | **Instructions** | **Points Possible** |
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| 1 | Start Excel. Download, save, and open the workbook named *Student\_Excel\_8F\_Smoothie\_Costs.xlsx* | 0 |
| 2 | Ensure that Solver is installed. With the Smoothie Costs worksheet displayed, in the upper left, click the Name Box arrow, and then click Percent\_Profit to select cell J5. Open Solver. Set the objective cell, Percent\_Profit (cell J5), to the Value Of **35%** and set the variable cells by selecting the range C4:C6. Click Solve. | 10 |
| 3 | Save the scenario as **No minimum weight** and then restore the original values. | 4 |
| 4 | Open Solver. Add a constraint where cellC7 >= **7.5** Click Solve. | 10 |
| 5 | Save the scenario as **Minimum 7.5 pounds** and restore the original values. | 4 |
| 6 | Add a constraint where cell C5 = C6**\*2** Click Solve. | 10 |
| 7 | Save the scenario as **Twice as much bananas as avocado** and restore the original values. | 4 |
| 8 | Open the Scenario Manager and create a scenario summary. As the Results cells type **=$j$5,$c$7** to summarize results from cells J5 and C7. | 8 |
| 9 | Display the Weekly Sales worksheet. Recall that the SUMIF function begins =sumif( and then—separated by commas—requires a range, then a criteria cell, and then a sum range ending with the close parentheses symbol. In cell I2enter a SUMIF function that looks at the range B2:B15 which has the defined name **SHIFT** for the criteria Morning in cell H2 and then sums the number of kid's size sold in the range C2:C15, which has the defined name **KIDS** Then copy the formula down through cell I4 to average the kid's sizes sold for each Shift. | 8 |
| 10 | Using the same technique, in cell J2 enter a SUMIF function that uses the Named Ranges **SHIFT** and **CUPS** to count the number of cups sold for each Shift in column H (use the cell reference H2 as the criteria). Copy the formula down through cell J4. | 10 |
| 11 | In cell F2, enter an IF function with a nested ANDfunction to test for Afternoon profits (in cell B2) greater than or equal to $100 (cell E2), and that returns the word **BEST** when both conditions are met, and that leaves the cell blank if conditions are not met.  Begin the formula **=IF(AND(b2="Afternoon",** and then complete the formula. You will not see a result in cell F2 because if does not meet the conditions. Copy the formula down through cell F15—only two cells will meet the conditions. Use the conditional formatting rule Text that Contains to format the cells with a red border for those days that meet both conditions. | 10 |
| 12 | In cell A17 type **Average Afternoon Profit Over $50** Click cell A18 and then on the Formulas tab, in the Function Library, click More Functions, point to Statistical, and then click AVERAGEIFS. Average the range E2:E15 using the Criteria range **SHIFT** with the Criteria1 equal to **Afternoon**. The second criteria range is E2:E15 and the second criteria is greater than **50**. Format the result with two decimal places. | 10 |
| 13 | Display the Supervisor Awards worksheet. Supervisors earn a bonus based on the Sales during their shift. In cell E3, enter an IFS function to compute a bonus based on the following: Sales over $1,200 earn a bonus of **$75**, Sales over $1,100 earn a bonus of **$50**, Sales over $1,000 earn a bonus of **$25**, and if conditions are not met, leave the cell blank. Copy the formula down through cell E16. Eleven bonuses display as the result. | 12 |
| 14 | Ensure that the worksheets are correctly named and placed in the following order in the workbook: Scenario Summary, Smoothie Costs, Weekly Sales, and Supervisor Awards. Save and close the file and then submit for grading. | 0 |

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| **Total Points** | **100** |