A.) The simulation was run by setting the order quantity to 300 and using cell D10 (Total Demand) as the output value. The results were obtained from SimVoi.1's Univariate Summary, which reported a mean total demand of 344.82 and a standard deviation of 78.60.

B.) The probability distribution for the total profit when 300 suits are ordered is skewed to the left. The estimate of the expected profit in this case is $14,912.87. This result was obtained by setting the order quantity to 300 and rerunning the Monte Carlo simulation using cell J10 (Total Profit) as the output value to determine the new expected profit and its distribution. The skewed distribution and low bars show the risks that the suits do not sell and have low demand, while the highest bar shows the maximum profit that all 300 suits could potentially sell for.

C.) The probability that 300 suits will be sold within four months at either half or full price is 70% based on the Sim Voi model. This was done by setting the order quantity to 300 and rerunning the Monte Carlo simulation with the output value cell set to D10 (Total Demand). Then, finding the number of trials that sold all 300 suits using the Sim Voi Monte Carlo simulation data and the formula, =COUNTIF('c.) SimVoi.3 Simulation Data'!B2:B5001, ">=300"), where B2 through B5001 are the total demands per each trial. After that the found value of 3543 was divided by the 5000 total trials to get 70%.

D.) In order to identify the order quantity that yields the highest expected total profit, the Monte Carlo simulation was rerun for each of the following order quantities: 275, 300, 325, 350, 375, 400, 425, 450, 475, and 500. This was repeated by adjusting the order quantity to the specified value and rerunning the Monte Carlo simulation, using cell J10 (Total Profit) as the output value.

E.) The 4th month demand was modified from RandTriangular(40, 80, 160) to RandTriangular(25, 50, 100) in cell C10, and the suit price was changed from $45 to $60 in cell A3. After making these changes, the Monte Carlo simulation was rerun, using cell J10 (Total Profit) as the output value. Based on the Monte Carlo simulation results, the $60 sale strategy in the final month yields a higher expected profit of approximately $15,199.00, compared to $14,912.87 under the $45 sale strategy, an improvement of about $286.13.

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Demand
Mean	344.8153819
St. Dev.	78.59916403
Mean St. Error	1.111560038
Skewness	+0.050
Not For Commercial Use	
Minimum	69.09824874
First Quartile	290.9833789
Median	344.5494478
Third Quartile	397.4316231
Maximum	661.988068

SimVoi 313 Student Version Univ
Only For Students And Instructors

	Total Profit
Mean	14912.8734
St. Dev.	3177.558371
Mean St. Error	44.93746143
Skewness	-1.145
Not For Commercial Use	
Minimum	535.8063037
First Quartile	13157.76143
Median	15689.85412
Third Quartile	17961.13585
Maximum	18000

SimVoi 313 Student Version Simulation Data
Only For Students And Instructors

Date	4/30/2025
Time	1:25:23 PM

Not For Commercial Use

Workbook	MonteCarlo_Simulation.xlsx
Number of Trials	5000
Seed	1142339666
Output Value Worksheet	Data & Answers
Output Value Cell	D10
Output Value Label	Total Demand
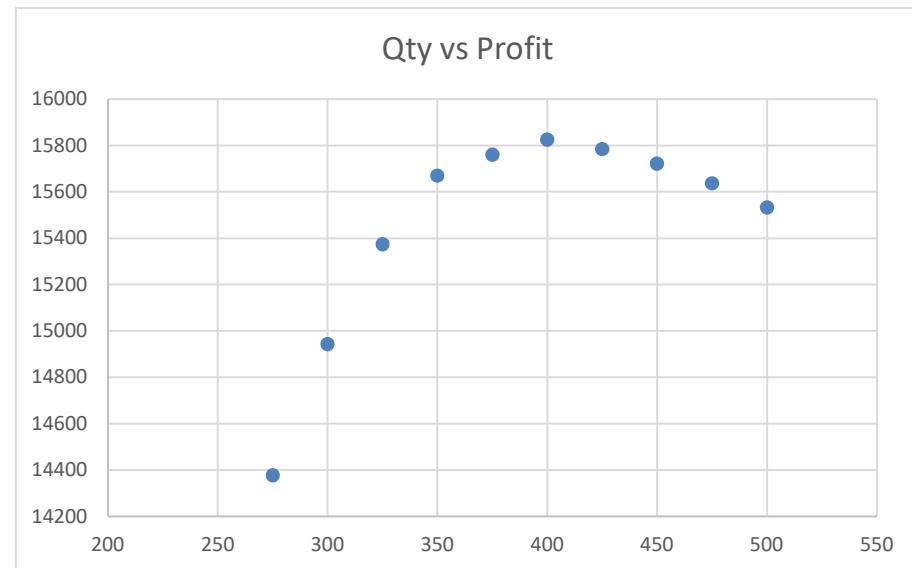
Order Qty	Expected Profit
275	14377.029
300	14944.006
325	15374.331
350	15669.802
375	15760.597
400	15825.543
425	15784.901
450	15722.274
475	15637.748
500	15533.297

	Total Profit
Mean	14377.02861
St. Dev.	2685.106376
Mean St. Error	37.97313853
Skewness	-1.575
Not For Commercial Use	
Minimum	377.535127
First Quartile	13184.37898
Median	15355.59454
Third Quartile	16500
Maximum	16500

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	14944.00581
St. Dev.	3158.471848
Mean St. Error	44.66753723
Skewness	-1.174
Not For Commercial Use	
Minimum	-712.3711278
First Quartile	13176.1889
Median	15689.43948
Third Quartile	17981.43406
Maximum	18000

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15374.33095
St. Dev.	3647.640871
Mean St. Error	51.5854319
Skewness	-0.949
Not For Commercial Use	
Minimum	-902.4081131
First Quartile	13218.96402
Median	16023.14163
Third Quartile	18484.18244
Maximum	19500

SimVoi 313 Student Version Univ
Only For Students And Instructors

	Total Profit
Mean	15669.80228
St. Dev.	4002.671697
Mean St. Error	56.606326
Skewness	-0.734
Not For Commercial Use	
Minimum	-3171.31671
First Quartile	13067.5882
Median	16286.75186
Third Quartile	18762.1195
Maximum	21000

	Total Profit
Mean	15760.59683
St. Dev.	4339.970419
Mean St. Error	61.37645027
Skewness	-0.460
Not For Commercial Use	
Minimum	-1032.648628
First Quartile	12719.46115
Median	16188.57836
Third Quartile	19163.3125
Maximum	22500

SimVoi 313 Student Version Univ
Only For Students And Instructors

	Total Profit
Mean	15825.54279
St. Dev.	4512.796719
Mean St. Error	63.82058324
Skewness	-0.355
Not For Commercial Use	
Minimum	44.20600978
First Quartile	12844.99083
Median	16083.30206
Third Quartile	19210.95423
Maximum	24000

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15784.90098
St. Dev.	4660.060611
Mean St. Error	65.90320917
Skewness	-0.249
Not For Commercial Use	
Minimum	-1722.722955
First Quartile	12641.98988
Median	15925.61037
Third Quartile	19173.75796
Maximum	25500

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15722.27447
St. Dev.	4737.935356
Mean St. Error	67.00452439
Skewness	-0.151
Not For Commercial Use	
Minimum	-4052.127156
First Quartile	12398.85733
Median	15826.06354
Third Quartile	19055.63727
Maximum	27000

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15637.74824
St. Dev.	4873.80173
Mean St. Error	68.92596507
Skewness	-0.121
Not For Commercial Use	
Minimum	-3343.313133
First Quartile	12480.23399
Median	15663.96429
Third Quartile	18976.08423
Maximum	28500

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15533.2974
St. Dev.	4884.1806
Mean St. Error	69.07274446
Skewness	-0.081
Not For Commercial Use	
Minimum	-1833.060318
First Quartile	12320.86802
Median	15599.86571
Third Quartile	18859.28041
Maximum	30000

SimVoi 313 Student Version Univa
Only For Students And Instructors

	Total Profit
Mean	15199.00019
St. Dev.	3221.669325
Mean St. Error	45.56128453
Skewness	-1.345
Not For Commercial Use	
Minimum	-521.9170193
First Quartile	13369.45579
Median	16426.09829
Third Quartile	18000
Maximum	18000