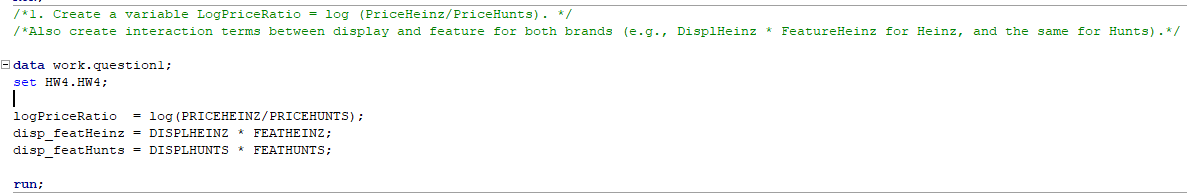
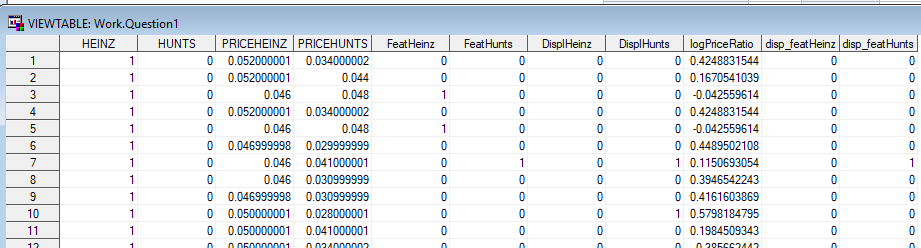
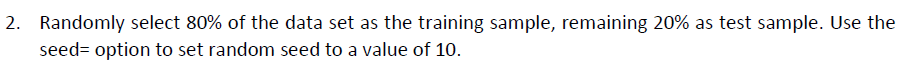


Code:

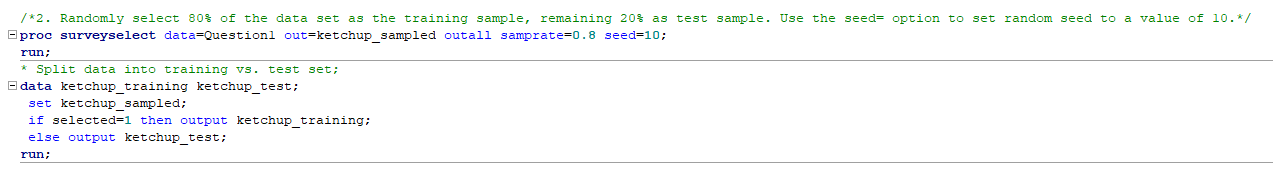


Output:

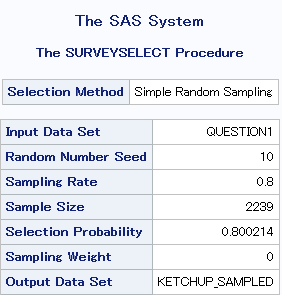


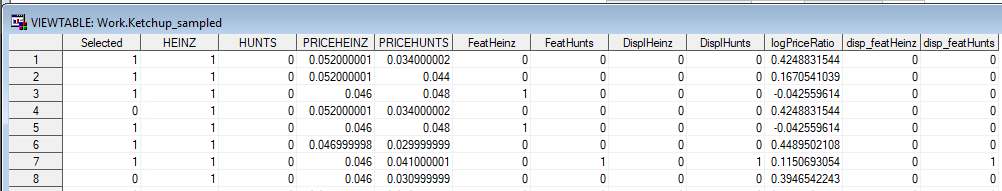


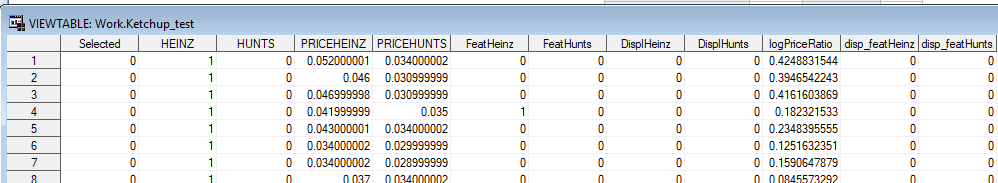
Code:

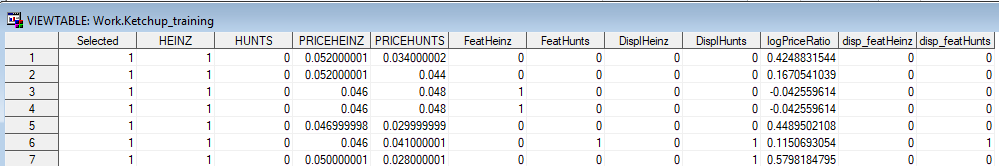


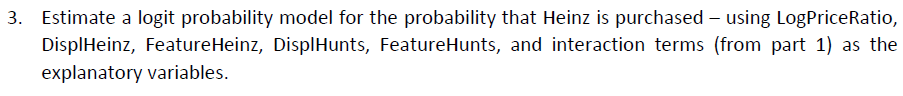
Output:



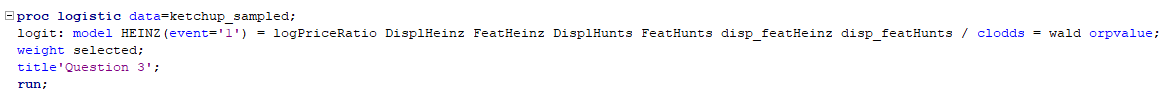




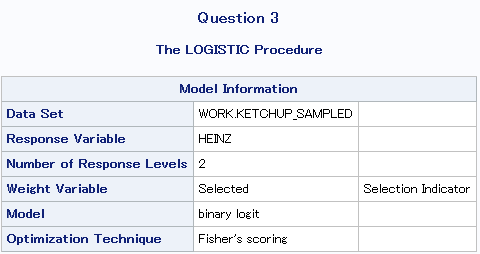


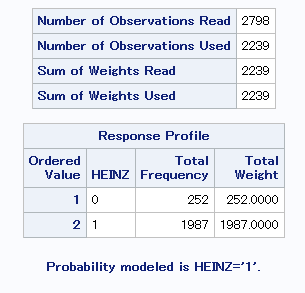


Code:

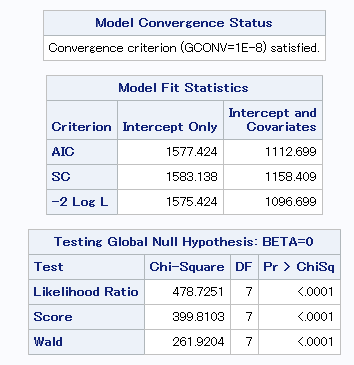


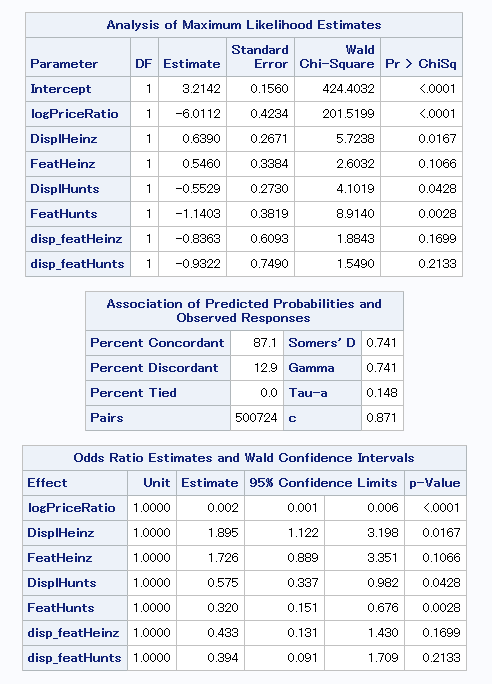
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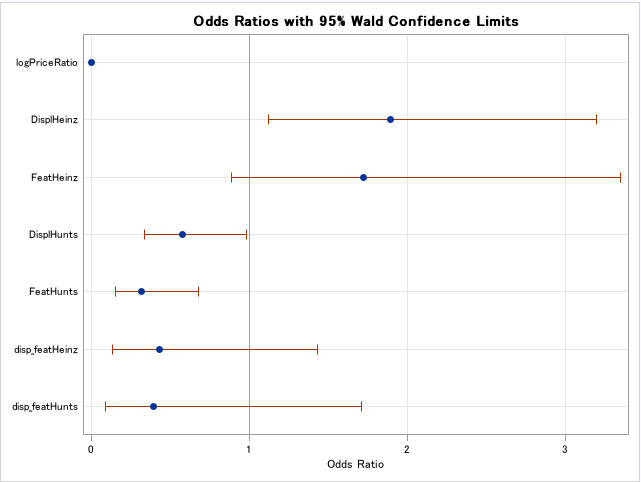


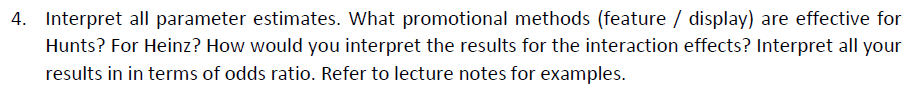






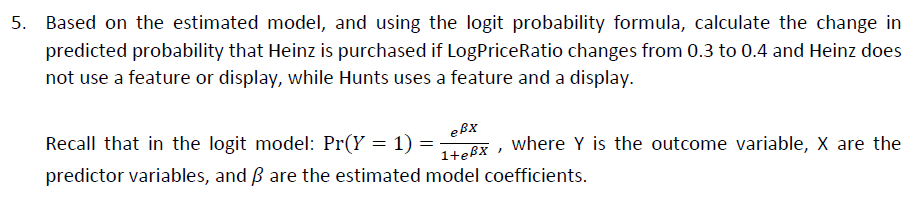


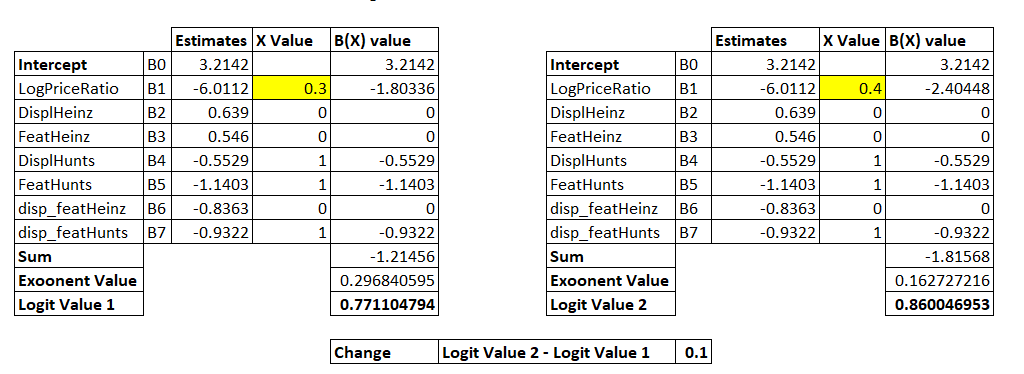


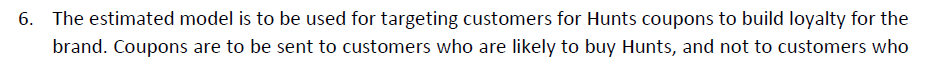


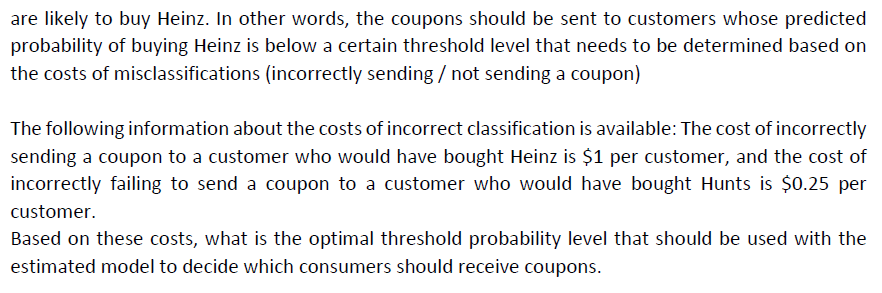
|  |  |  |
| --- | --- | --- |
| **Analysis of Maximum Likelihood Estimates** | | |
| **Parameter** | **Estimate** | **Interpretation** |
| Intercept | 3.2142 | Without any variables into account, Probability of customer buying Heinz is 3.21 |
| logPriceRatio | -6.0112 | 1 unit increase in logPriceRatio decreases the probability of customer buying Heinz is 6.01 |
| DisplHeinz | 0.639 | 1 unit increase in Display of Heinz on shelf increase Probability of buying Heinz by 0.639 units |
| FeatHeinz | 0.546 | 1 unit increase in Featuring Heinz increases Probability of buying Heinz by 0.546 units |
| DisplHunts | -0.5529 | 1 unit increase in Display of Hunts on shelf decreases Probability of buying Heinz by 0.5529 units |
| FeatHunts | -1.1403 | 1 unit increase in Featuring Hunts decreases Probability of buying Heinz by 1.14 units |
| disp\_featHeinz | -0.8363 | 1 unit increase in disp\_featHeinz decreases the Probability of customer buying Heinz by 0.84. **P-value here is statistically insignificant, so we can say there is no interaction between Display and Featuring of Heinz** |
| disp\_featHunts | -0.9322 | 1 unit increase in disp\_featHunts decreases the probability of customer buying Heinz is 0.93. **P-value here is statistically insignificant, so we can say there is no interaction between Display and Featuring of Hunts** |

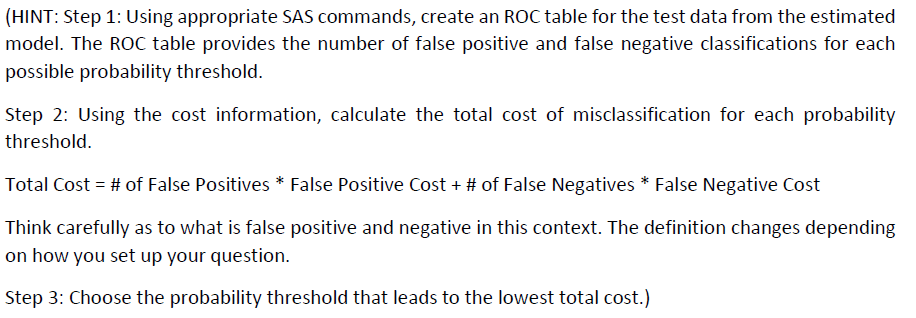
|  |  |  |
| --- | --- | --- |
| **Odds Ratio Estimates and Wald Confidence Intervals** | | |
| **Parameter** | **Estimate** | **Interpretation** |
| logPriceRatio | 0.002 | 1 unit increase in logPriceRatio increases the odds of customer buying Heinz is 0.002 |
| DisplHeinz | 1.895 | 1 unit increase in DisplHeinz increases the Odds of customer buying Heinz is exp(1.895) = 6.65 |
| FeatHeinz | 1.726 | 1 unit increase in FeatHeinz increases the Odds of customer buying Heinz is exp(1.726) = 5.61 |
| DisplHunts | 0.575 | 1 unit increase in DisplHunts increases the odds of customer buying Heinz exp(0.575) = 1.77 |
| FeatHunts | 0.32 | 1 unit increase in FeatHunts increases the odds of customer buying Heinz is exp(0.32) = 1.37 |
| disp\_featHeinz | 0.433 | 1 unit increase in displ\_featHeinz increases the odds of customer buying Heinz is exp(0.433) = 1.54 |
| disp\_featHunts | 0.394 | 1 unit increase in disp\_feathunts increases the odds of customer buying Heinz is exp(0.394) = 1.48 |







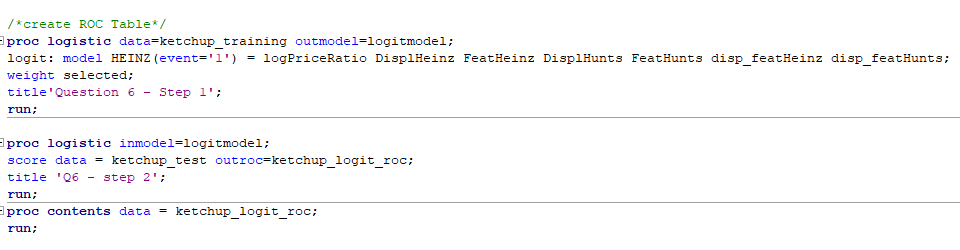




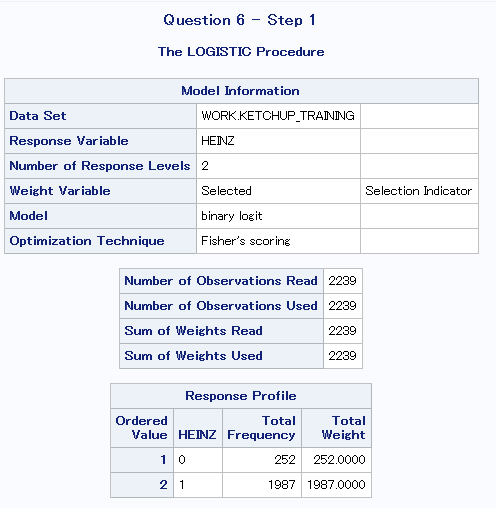
Ans:

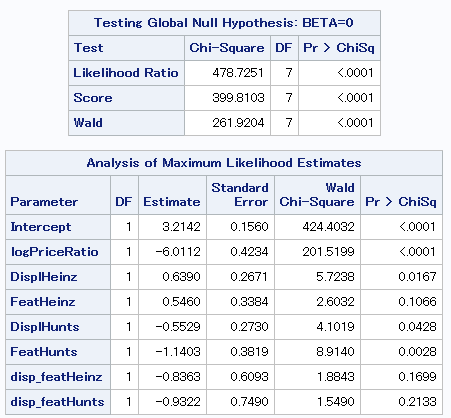
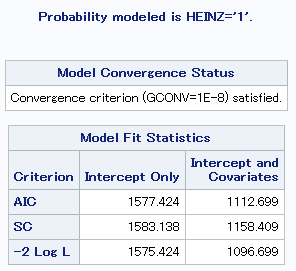
**Creating ROC Table**

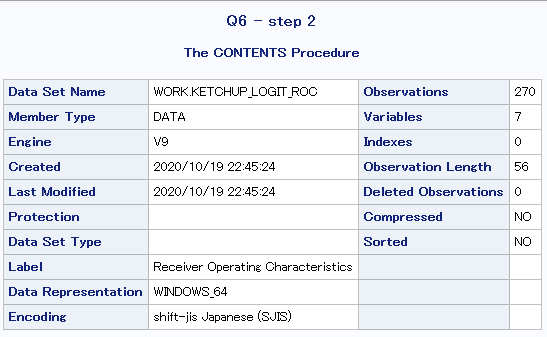
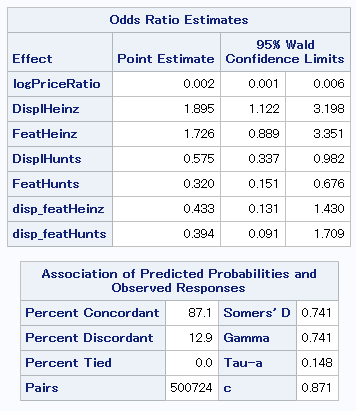
Code:

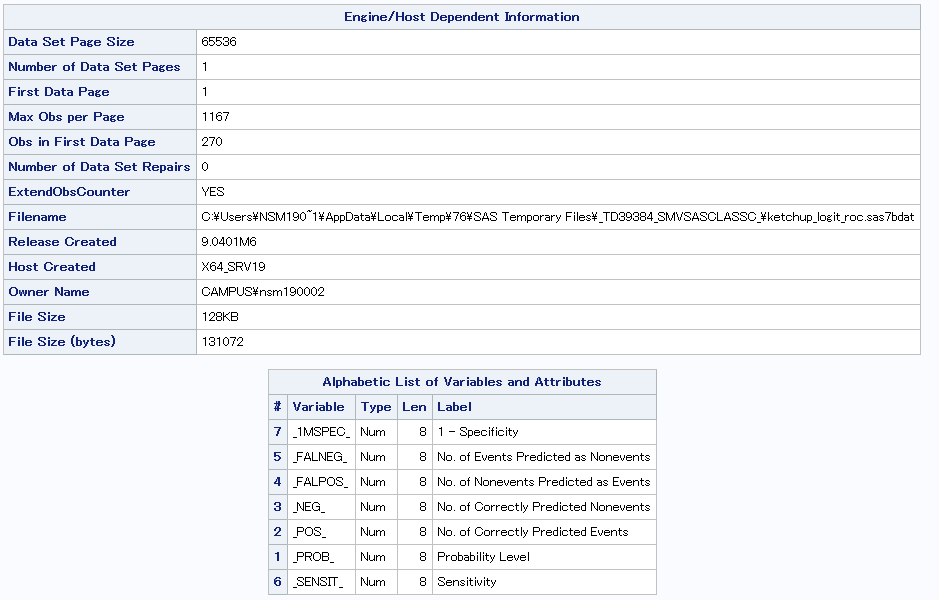


Output:

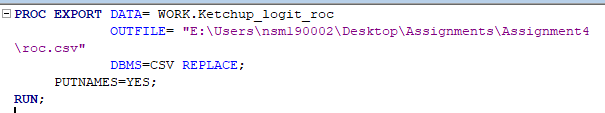








**Export ROC Table program:**

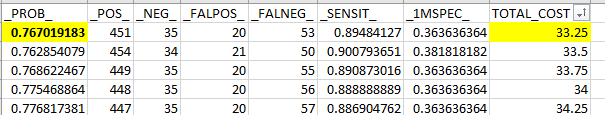


Total Cost = # of False Positives \* False Positive Cost + # of False Negatives \* False Negative Cost



Applying the above formula in roc table received from SAS.

And then finally sort the TOTAL\_COST Column and select the least cost.



Final Probability Threshold: **0.77**