Name(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**BA 355: Case 1, Part 2**

What were the average point spread and average over/under for NFL games in 2017? And what logistic coefficients are the best for all the data from 2013 – 2016 plus 2017?

These answers would be easy if you had the data in MS Excel, but you don’t. That’s the hard part.

1. Go to [www.goldsheet.com](http://www.goldsheet.com). Click the NFL tab and find “Historic Logs & Ratings.” Find the 2017 link.
2. On the link, select all and copy and paste into Excel.
3. Sort the data and find an efficient way to eliminate the rows that are junk – i.e., no useful data.
4. Make the data look exactly like the data for years 2013 – 2016. Use only the non-positive point spreads.

**Questions:**

* 1. What are the mean, median and mode for the 2017 point spread?
	2. What are the mean, median and mode for the 2017 over/under?

Now combine the 2017 data with the other four years you already have. Redo the PivotTable and re-draw the graph of point spreads versus historical percentages of wins. Include the results of the PivotTable, with each point spread and probability. Use the Solver function in Excel to fit the general logistic function:

$$y=\frac{1}{(1+e^{-(β0+β1x)})}$$

Fit this curve using first using just the 36 pairs of points from the PivotTable and by minimizing the sum of the errors squared. What are

1. the coefficients β0 and β1.
2. the coefficient β1 forcing β0 = 0.

e) **Print** the graph of the data with the very cool logistic curve.

Now recalculate the values for c) and d) above using all 1335 data points and minimizing the sum of the errors squared, calling these answers f) and g).