**Dillard's**
The Style of Your Life.

Nike brand shoe sales for Dillard's Stores in Colorado (2016 - 2018 partial) are shown to the right.

Use your research and Excel to:

1. Derive and confirm the regression **equation** for this cyclical Nike shoe sales data.
2. Use this equation (function) to extrapolate all Dillard's monthly Nike shoe sales in 2018-2019.
3. Using interpolation, fill in any missing data points from the historical sales record.
4. Explain why this curve makes sense and what it means to your store sales.
5. Explicitly identify your answers in your Word report and on your spreadsheet.
6. Using your regression equation, predict the total number of Nike shoes that will be sold by Dillard's in 2020.

Present your findings in a professional, MS Word processed format (to include supporting calculations and spreadsheets).

Send this final Word document report to mheinen_1@msn.com. Include (attach) the MS Word document and any Excel spreadsheet(s). PDFs may be sent in lieu of Excel/Word files.

Ensure both files are "print" ready.

Name your MS Excel spreadsheet file: Nike_Shoes-Lastname

Example: Nike_Shoes-Heinen.xlsx
(The computer will add the suffix ".xlsx")

**Due Date: NLT midnight Monday, October 15, 2018.**

**Extra credit (10 points):** Use the Chi Squared distribution to confirm the accuracy of your regression equation.

| Year | Month Name | Month | Sales (1,000) |
|---|---|---|---|
| 2016 | Jan | 1 | 1.38 |
| | Feb | 2 | 1.56 |
| | Mar | 3 | 1.65 |
| | Apr | 4 | |
| | May | 5 | |
| | Jun | 6 | 1.39 |
| | Jul | 7 | 1.21 |
| | Aug | 8 | 1.30 |
| | Sep | 9 | 0.99 |
| | Oct | 10 | 0.50 |
| | Nov | 11 | 1.11 |
| | Dec | 12 | 1.31 |
| 2017 | Jan | 13 | 1.57 |
| | Feb | 14 | |
| | Mar | 15 | 2.09 |
| | Apr | 16 | 2.26 |
| | May | 17 | |
| | Jun | 18 | |
| | Jul | 19 | 2.23 |
| | Aug | 20 | 2.08 |
| | Sep | 21 | 1.80 |
| | Oct | 22 | 1.76 |
| | Nov | 23 | |
| | Dec | 24 | 1.70 |
| 2018 | Jan | 25 | 1.82 |
| | Feb | 26 | 2.02 |
| | Mar | 27 | 2.28 |
| | Apr | 28 | 2.55 |
| | May | 29 | 2.79 |
| | Jun | 30 | 2.97 |
| | Jul | 31 | |
| | Aug | 32 | |
| | Sep | 33 | |
| | Oct | 34 | |
| | Nov | 35 | |
| | Dec | 36 | |
| 2019 | Jan | 37 | |
| | Feb | 38 | |
| | Mar | 39 | |
| | Apr | 40 | |
| | May | 41 | |
| | Jun | 42 | |
| | Jul | 43 | |
| | Aug | 44 | |
| | Sep | 45 | |
| | Oct | 46 | |
| | Nov | 47 | |
| | Dec | 48 | |