

2.1 Stem-and-Leaf Graphs (Stemplots), Line Graphs, and Bar Graphs

Stem-and-Leaf Graphs

For moderately small data sets (15 – 150) , a stem-and-leaf graph can be a useful organization of the data in a way that displays the shape of the data yet preserves the data elements. This graph is created by listing the final significant digit in a row to the right of the respective stem, which is the rest of the number with the final digit truncated. The stems are listed in order, vertically in a table, and the leaves of each stem are listed in order, to the right of each stem. A side-by-side stem-and-leaf graph allows the comparison of two related data sets. Notice in the stem and leaf graph to the right, every data value in the study can be retrieved for both before the stress test and after.

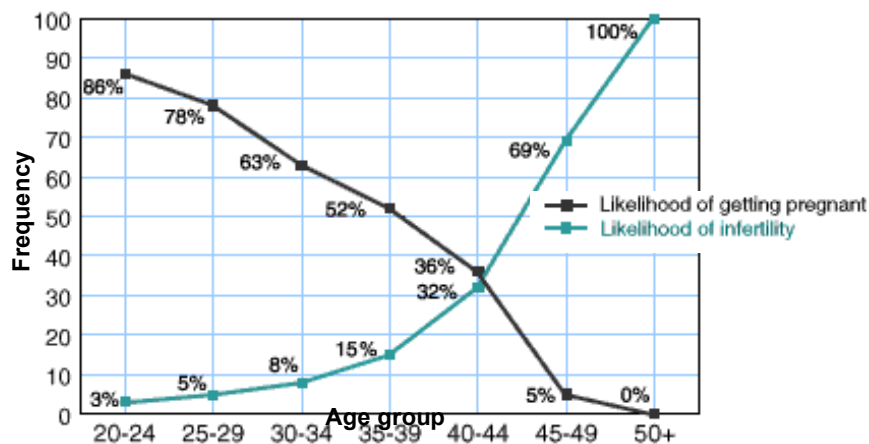
Pulse Rates of 19 Patients Before and After a Stress Test

pulse rate	
before	after
9 8 8 8	6
8 6 6 4 1 1 0	7
8 8 6 2	8 6 7 8 8
6 0	9 0 2 2 4 5 8 9 9
4	10 0 4 4
0	11 8
	12 4 4
	13
	14 6

Line Graph

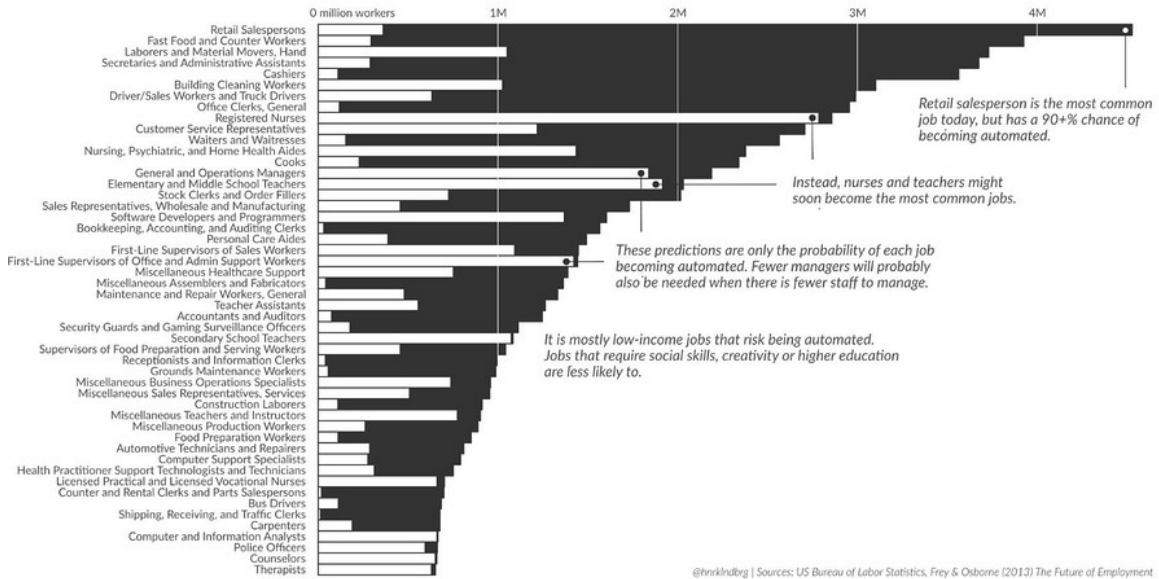
Data trends can be readily seen in a line graph when two sets of data are being compared. The horizontal axis in a line graph is labeled with data categories or classes while the vertical axis represents the frequency of each. A point is plotted according to associated data values and frequencies, and lines are drawn connecting the points from left to right.

Results of Fertility Trials of 512 Women Residing in the U. S.



Bar Graph (Pareto Chart)

A pareto chart is a bar graph that provides an ordering of the most important data to the least. The following pareto chart has some interesting data from 2013.



On the next two pages we will construct a pareto chart from current data from Tehama county employers.

Major Employers in Tehama County

Business	Number of employees
Antelope School District	85
Bell Carter	350
CA Division of Forestry	240
City of Red Bluff	170
County of Tehama	830
Dept of Water Resources	73
Food Maxx	85
John Wheeler Logging	105
Lassen Medical Group	110
Louisiana Pacific I-Joist Facility	109
Petro Truck Stop and Iron Skillet	94
Raley's Super Stores	135
Red Bluff Elementary School District	260
Red Bluff High School District	225
Rolling Hills Casino	515
Sierra Pacific (Millworks)	450
Sierra Pacific Windows	510
St. Elizabeth Hospital	465
Tehama County Dept of Education	260
Travel Center of America	73
Wal-Mart (Retail)	254
Wal-Mart Distribution Center	925

Construct a Pareto Chart to display the number of employees for the five largest employers in Tehama County adhering to the following rules:

1. Vertical bars must be of the same width.
2. Frequencies must be arranged in order from largest to smallest.
3. The units used to measure the vertical bars must be equal.

*Five Largest Tehama County
Employers, 2017*
