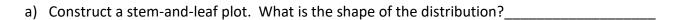
Section D <u>Summarizing Quantitative Data (Continued)</u>

<u>Stem-and-Leaf plots</u> – simple way to display small data sets (similar to histogram). The number get split into a stem part and a leaf part. The stem part can be any number of place values, but the leaf part can only be one place value, usually the smallest place value in the number.

1) The following table presents the daily high temperatures for West Windsor Township, NJ, in degrees Fahrenheit, for the winter months of January and February, 2018.

19	24	30	27	17	15	18	32	44	42	56	65	63	26	32	42	35	32
41	55	52	55	61	45	36	40	58	54	45	38	31	44	37	32	38	38
37	47	34	38	47	65	65	39	53	63	60	42	45	49	71	78	57	44
51	46	52	56	61													



b) Repeat part (a), but split the stems, using two lines for each stem.

2) A pediatrician who tested the cholesterol levels of several young patients was alarmed to find that many had levels over 200 mg per 100 mL. The readings of 20 patients with high levels are presented in the following table. Construct a stem-and-leaf plot of the data and describe the shape of the distribution.

220	209	212	208	202	218	196	214	188	210
217	165	210	223	235	221	213	210	199	208

3) The Food and Nutrition Board of the National Academy of Sciences states that the recommended daily allowance of iron is 18mg for adult females under the age of 51. The amounts of iron intake, in milligrams, during a 24-hour period for a sample of 45 such females follows. Construct a stem-and-leaf plot of the data and describe the shape of the distribution.

6.3	9.4	10.7	10.9	11.0	11.5	11.5	11.6	11.9
12.1	12.4	12.5	12.5	12.5	12.6	12.7	12.8	13.1
14.4	14.5	14.6	14.6	14.7	15.0	15.0	15.3	15.6
16.0	16.3	16.3	16.4	16.6	16.6	16.8	17.0	17.3
18.1	18.1	18.2	18.3	18.3	18.6	19.5	19.8	20.7

<u>Back-to-back stem-and-leaf plot</u> – used to compare two data sets.

Example:

Following are the running times (in minutes) for the 15 top-grossing movies rated G or PG and the top 15 top-grossing movies rated R of all time, as of August 2018.

Movies Rated G or PG		Movies Rated R	
Incredibles 2	118	The Passion of Christ	126
Beauty and The Beast (2017)	129	Deadpool	106
Finding Dory	103	American Sniper	132
Star Wars: Episode I – The Phantom Menace	133	It	135
Star Wars	121	Deadpool 2	119
Shrek 2	93	The Matrix Reloaded	138
E.T.: The Extra-Terrestrial	117	The Hangover	96
The Lion King	89	The Hangover Part II	102
Toy Story 3	103	Beverly Hills Cop	105
Frozen	108	The Exorcist	122
Finding Nemo	104	Logan	135
The Secret Life of Pets	90	Ted	106
Despicable Me 2	98	Saving Private Ryan	170
The Jungle Book (2016)	105	300	117
Inside Out	94	Wedding Crashers	113

a) Construct a back-to-back stem-and-leaf plot for these data sets.

b) Do the running times of R-rated movies differ greatly from the running times of movies rated G or PG, or are they roughly similar?