

Practice: Stem-and-Leaf Plots

The stem-and-leaf plot at the right shows the bowling scores for 20 bowlers. Use the plot for Exercises 1–3.

10		0	2	2	4	4	4
11		1	3	5	5	5	9
12		4	5	9	9		
13		0	6	8	8		

13 | 8 means 138

1. What numbers make up the stems?  
\_\_\_\_\_
2. What are the leaves for the stem 12?  
\_\_\_\_\_
3. Find the median, mode, and range.  
\_\_\_\_\_

Make a stem-and-leaf plot for each set of data. Then find the median, mode, and range.

4. 8 19 27 36 35 24 6 15 16 24 38 23 20  
\_\_\_\_\_
5. 8.6 9.1 7.4 6.3 8.2 9.0 7.5 7.9 6.3 8.1 7.1 8.2 7.0 9.6 9.9  
\_\_\_\_\_
6. 436 521 470 586 692 634 417 675 526 719 817  
\_\_\_\_\_
7. 17.9 20.4 18.6 19.5 17.6 18.5 17.4 18.5 19.4  
\_\_\_\_\_

The back-to-back stem-and-leaf plot at the right shows the high and low temperatures for a week in a certain city. Use this plot for Exercises 8–10.

Low		Temperature		High	
8	7		5		
4	3		6	5	9 9
2	1 0		7	2	5 6
			8	0	
63 ←			3   6   2 →	62	

8. Find the range for the high temperatures.  
\_\_\_\_\_
9. Find the median for the low temperatures.  
\_\_\_\_\_
10. Find the mode for the high temperatures.  
\_\_\_\_\_
11. Make a back-to-back stem-and-leaf plot for the following data.  
Find the median and mode for each set of data.  
Set A: 75 82 79 80 75 76 83 74 75 86 80 71 75 \_\_\_\_\_  
Set B: 71 73 75 80 79 80 74 80 74 79 76 80 81 \_\_\_\_\_

# REVIEW (EXAM I)

## Chapter 1

1. For the studies described, identify the population, sample, population parameters, and sample statistics:

- e) The Gallup Organization conducted a poll of 1003 Americans in its household panel to determine what percentage of people plan to cancel their summer vacation because of the increase in gasoline prices.
- f) Harris Interactive surveyed 2435 U.S. adults nationwide and asked them to rate quality of American public schools.
- g) The American Institute of Education conducts an annual study of attitudes of incoming college students by surveying approximately 261,000 first-year students at 462 colleges and universities. There are approximately 1.6 million first-year college students in this country.

2. Determine whether the numerical value is a parameter or a statistics (and explain):

- d) A survey of 1103 students were taken from the university with 19,500 students.
- e) The 2006 team payroll of the New York Mets was \$101,084,963.
- f) In a recent study of physics majors at the university, 15 students were double majoring in math.

3. Identify whether the statement describes inferential statistics or descriptive statistics:

- a) Based on previous clients, a marriage counselor concludes that the majority of marriages that begin with cohabitation before marriage will result in divorce.
- b) 78% of electricity used in France is derived from nuclear power.

4. Determine whether the data are qualitative or quantitative:

- a) the social security numbers of the employees in the law firm
- b) the zip codes of a sample of 270 customers at a local grocery store
- c) the number of complaint letter received by the USPS in a given month

5. Identify the data set's level of measurement (nominal, ordinal, interval, ratio):

- p) numbers of touchdowns scored by a major university in five randomly selected games : 1 2 5 1 2
- q) the average daily temperatures (in degrees Fahrenheit) on seven randomly selected days
- r) manuscripts rated as "acceptable" or "unacceptable"
- s) the lengths (in minutes) of the top ten movies with respect to ticket sales in 2007
- t) the size-class for a sample of automobiles:  
subcompact   compact   midsize   large   compact   large
- u) the four departments of a car dealership:  
sales   financing   parts and service   customer service
- g) the years of birth for students in this class

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1. What numbers make up the stems?

10-13

13 | 8 means 138

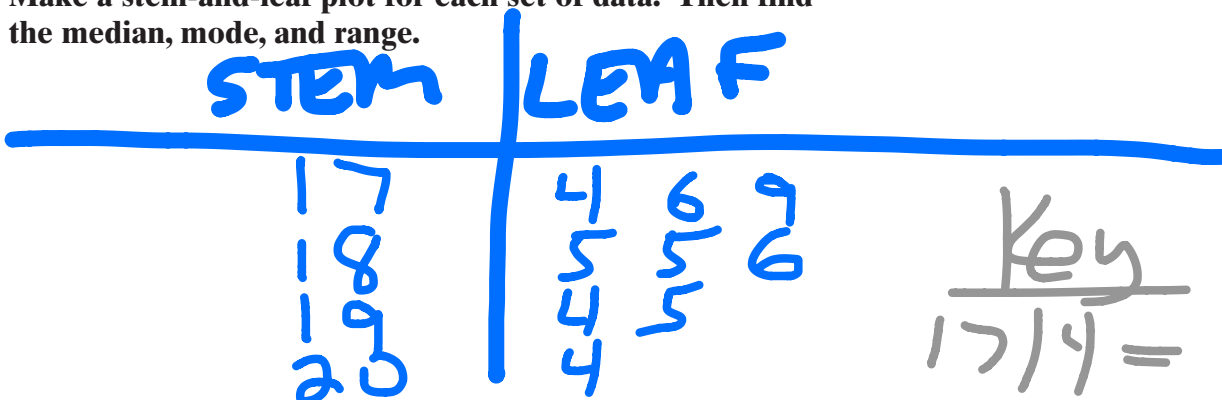
2. What are the leaves for the stem 12?

4 5 9 9

3. Find the median, mode, and range.

115 115 38

Make a stem-and-leaf plot for each set of data. Then find the median, mode, and range.



7. 17.9 20.4 18.6 19.5 17.6 18.5 17.4 18.5 19.4

The back-to-back stem-and-leaf plot at the right shows the high and low temperatures for a week in a certain city. Use this plot for Exercises 8–10.

Temperature		
Low		High
8 7	5	
4 3	6	5 9 9
2 1 0	7	2 5 6
	8	0

63 ← 3 | 6 | 2 → 62

8. Find the range for the high temperatures.

15

9. Find the median for the low temperatures.

64

10. Find the mode for the high temperatures.

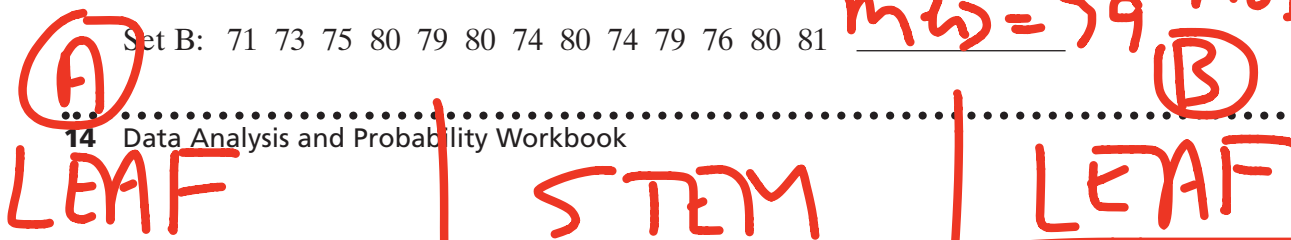
69

11. Make a back-to-back stem-and-leaf plot for the following data. Find the median and mode for each set of data.

Set A: 75 82 79 80 75 76 83 74 75 86 80 71 75

Set B: 71 73 75 80 79 80 74 80 74 79 76 80 81

med = 76 max = 86  
mode = 79 mode = 82



4	1	7	1 3 4 4
9 6 5 5 5 5	7	5 6	9 9
3 2 0 0	8	0 0 0 0 1	
6	8		

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sales financing parts and service customer service
- the years of birth for students in this class

### SOLUTIONS:

- population: all Americans; sample: 1003 Americans surveyed;  
population parameter: percentage of all Americans who plan to cancel their vacation;  
sample statistic: percentage of those in the sample who plan to cancel their vacation
  - population: all Adult Americans; 2435 selected adults  
population parameter: opinions of all American adults on public schools;  
sample statistics: opinions of those in the sample on public schools
  - population: 1.6 million first-year college students; sample: 261,000 selected first-year college students; population parameters: attitudes of all first-year college students;  
sample statistics: attitudes of those in the sample (261,000 selected)
- statistics – only 1103 students were surveyed (not all students)
  - parameter – the entire team payroll is included
  - parameter – all physics majors were included in the study
- inferential b) descriptive
- qualitative b) qualitative c) quantitative
- ratio b) interval c) ordinal d) ratio e) ordinal f) nominal g) interval
- experiment b) survey c) simulation
- stratified b) systematic c) convenience d) random e) cluster
- Yes – most likely people who go camping do not approve of air pollution.