10.4 Interpret Stem-and-Leaf Plots and Histograms

Before You found measures of central tendency and dispersion.

Now You will make stem-and-leaf plots and histograms.

Why? So you can analyze historical data, as in Ex. 20.

A stem-and-leaf plot is a data display that organizes data based on their digits.

$\frac{13}{2} = 6.5 \approx 7$

Example: 65, 72, 52, 84, 66, 82, 57, 66, 58, 80, 62, 59, 52

Stem	Leaves
5	2 7 8 9 2
6	5 6 6 2
7	2
8	4 2 0

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

Not just for 2 digit numbers!

mode = 52, 66
range: 84 − 52 = 32
median = 65

127, 131, 112, 109, 113, 123, 140, 138

10	9
11	2 3
12	7 3
13	1 8
14	0

10	9
11	2 3
12	3 7
13	1 8
14	0

$109 < x < 140$

$\frac{8}{2} = 4$ 4 and 5

$\frac{123 + 127}{2}$

median 125

EXAMPLE 1 Make a stem-and-leaf plot

BASEBALL The number of home runs hit by the 20 baseball players with the best single-season batting averages in Major League Baseball since 1900 are listed below. Make a stem-and-leaf plot of the data.

14, 25, 8, 8, 7, 7, 19, 37, 39, 18, 42, 23, 4, 32, 14, 21, 3, 12, 19, 41

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

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

mode = 14, 19
7, 8

$\frac{20}{2} = 10$ & 11th

$\frac{18+19}{2} = 18.5$

Range $42 - 3 = 39$

EXAMPLE 2 Interpret a stem-and-leaf plot

GYMNASTICS The back-to-back stem-and-leaf plot shows the ages of members of the ~~U.S men's and women's~~ 2004 Olympic gymnastics teams. Compare the ages of the gymnasts on the two teams.

2004 Olympic Gymnast Ages

Men				Women				
				1	6	6	8	8
7	4	3	1	1	2	5	6	
				0	3			

Key: 1 | 2 | 5 = 21, 25

7	2 3
8	7 8 9
9	1 7

8|7 = 8.7

The frequency of an interval is the number of data values in that interval. Here is an example of a frequency table:

A	𝍸	5
B	𝍸 |	3
C	||	2
D	||	2
F	|	1

90-100	5
80-89	3
70-79	2
60-69	2
50-59	1

A histogram is a bar graph that displays data from a frequency table. Each bar represents an interval. Because intervals have equal size, the bars have equal width. A bar's length indicates the frequency. There is no space between bars.

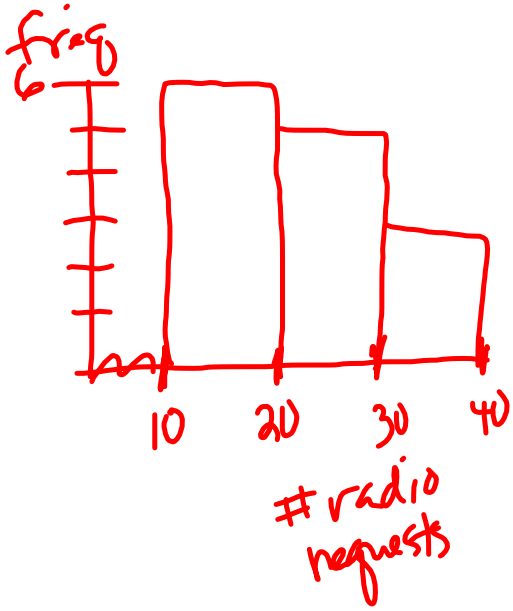
The number of song requests per day for a two week period at a radio station are shown below. Make a histogram of the data.

12, 22, 18, 26, 31, 34, 17, 26, 28, 10, 20, 14, 15, 32

10-19 |||| | = 6

20-29 |||| = 5

30-39 ||| = 3



Homework:

Lesson 10-4 Worksheet (Both Sides)