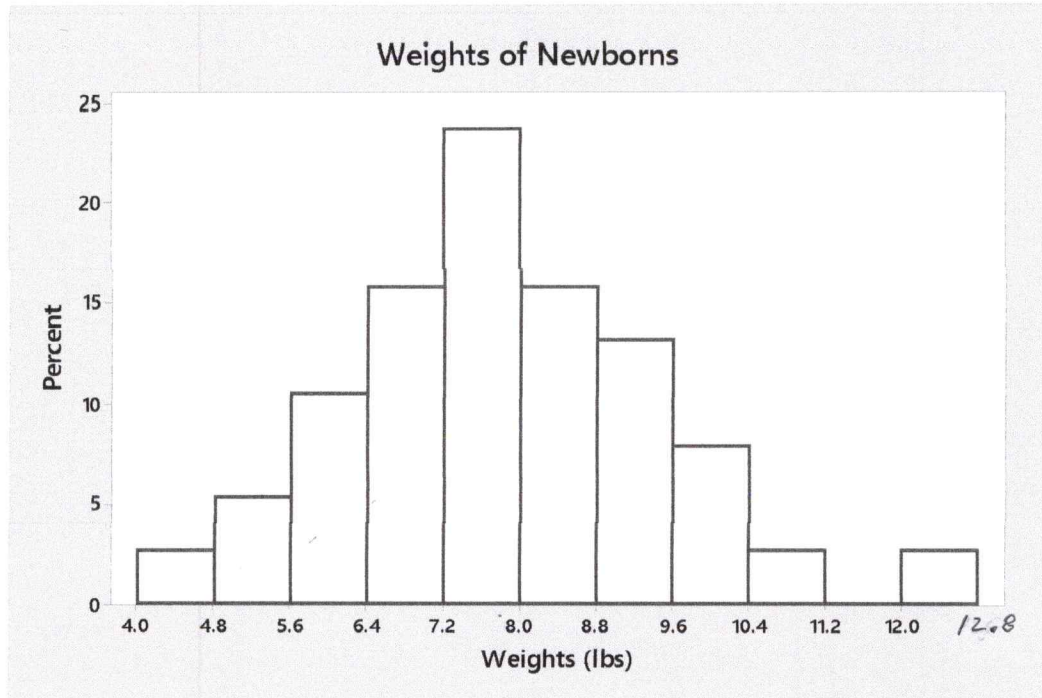


KEY

Prep for Quiz 4

- I. The following is a histogram of sample of the weights of newborn full-term babies.



- Describe the shape of the distribution.
The distribution of newborn weights is bell-shaped with a possible outlier on the high end.
- Identify the center (median) of the distribution.
The median weight is between 7.2 and 8.0 lbs (— approximately 7.5 lbs)
- Describe the spread of the distribution (state minimum to the maximum and a region that contains the most values).
The weights range from approximately 4.0 lbs to 12.8 lbs with most from 6.4 to 9.6 lbs.
- Describe any unusual features (e.g. outliers) of the distribution.
There is a possible outlier between 12.0 and 12.7 lbs
- What are the class limits for the first two classes?

4.0 - 4.7
4.8 - 5.5
⋮

II. A farmer has 16 cows. He records the average amount (in gallons) of milk each cow produces per day over a given month. The results are: 7.4, 6.3, 8.2, 4.6, 8.7, 8.3, 6.7, 7.1, 7.9, 8.5, 7.6, 8.2, 6.0, 7.1, 8.0, 8.3 (Be sure to give the leaf-unit)

1. Construct a frequency distribution table for this data by grouping into classes (bins) with a width of 0.8 gallons per day, make the first class 4.0 – 4.7

Gallons	Talley	Frequency
4.0 – 4.7		1
4.8 – 5.5		0
5.6 – 6.3		2
6.4 – 7.1		3
7.2 – 7.9		3
8.0 – 8.7		7

2. Create an ordered stem-and-leaf display for this data (let the stems be the “ones” digits)

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

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

LEAF UNIT = 0.1

3. Describe the shape (shape only) of the distribution.

skewed to the left
 ("negatively")

III. A statistical measure is said to be resistant if it is not affected
by outliers.

- IV. When is the median preferred over the mean as a measure of center.

The median is preferred over the mean when the distribution is not symmetrical (it's skewed) or there are outliers present.

V. The following is a stem-and-leaf plot of yield per acre (in tons) of Chardonnay grapes for 20 vineyards in Sonoma county (note that this is Minitab output and includes the 'depth' column which you can ignore or make use of to locate positions). Note the leaf-unit is not 1.0.

Stem-and-leaf of Yield N = 24
Leaf Unit = 0.10

2	1	47
8	1	567899
(8)	2	00113444
8	2	5679
4	3	14
2	3	7
1	4	
1	4	6

location of the median
is $\frac{24+1}{2} = 12.5$

1. Find the median

$$\frac{2.1 + 2.3}{2}$$

Median = 2.2

2. Compute the midrange

$$\frac{1.4 + 4.6}{2} = \frac{6.0}{2}$$

midR = 3.0

3. Find the mode (if there is one)

mode = 2.4

VI. The following data represents the number of sales made in a small independent bookstore each hour on a particular day. 4, 7, 8, 12, 15, 17, 12, 10, 4, 3

1. compute the mean (Hint: $\sum x = 92$)

$$\bar{x} = \frac{92}{10}$$

$\bar{x} =$ 9.2

2. find the median

3 4 4 7 8 | 10 12 12 15 17
(8+10)/2

Md = 9

3. compute the 10% trimmed mean

$$\frac{10\% \times 10 = 1}{92 - 3 - 17} = \frac{72}{8}$$

$\bar{x}_{10\% \text{ trimmed}} =$ 9

VII. An investment group has bought Netflix stock over a period of time, they bought 3000 shares in June 2006 for \$4 per share, 1500 shares in February 2011 for \$30 per share, and 500 shares in April 2016 for \$90 per share. Use a weighted mean to compute their mean cost per share of Netflix stock.

$$\frac{4 \cdot 3000 + 30 \cdot 1500 + 90 \cdot 500}{3000 + 1500 + 500} = \frac{102000}{5000} = \$20.40$$

Note: Netflix is now selling for \approx \$370!
\$10000 invested in 06 is now worth \approx \$1,000,000!!