

Acronym "Coss and BS"

Pg. 42

SECTION 1.2

Exercises

Center
Unusual
Shape
Spread

Be
Specific

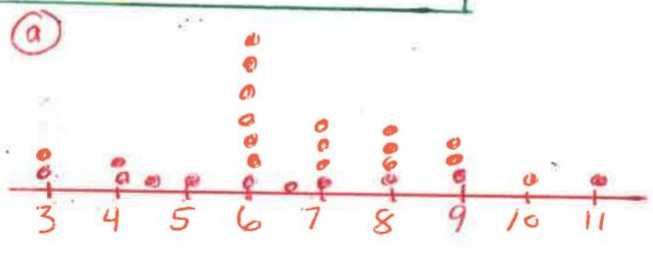
37. Feeling sleepy? Students in a college statistics class responded to a survey designed by their teacher. One of the survey questions was "How much sleep did you get last night?" Here are the data (in hours):

9	6	8	6	8	8	6	6.5	6	7	9	4	3	4
5	6	11	6	3	6	6	10	7	8	4.5	9	7	7

- (a) Make a dotplot to display the data. MINIMUM - 3
MAXIMUM - 11
- (b) Describe the overall pattern of the distribution and any deviations from that pattern.

Remember Shape, Center, Spread
Outliers in context.

Notice the highlighted hedging words, because statistics are NOT an exact science.



The shape is roughly symmetric with a center around 6 hrs. The spread has a range of 8 hours with a minimum of 3 hrs and a maximum of 11 hrs. There do not appear to be any outliers.

39) a) Games where the U.S. lost by 2 goals (or opposing team wins by 2 goals)

b) They graph shows us the 2004 team had a good season. They only lost 2 games, tied 4 games, and won 28 games. (The team scored at least as many goals as their opponent in 32 of 34 games.) In one game, they beat a team by 8 goals, which is a possible outlier.

43) The average ratings are higher for the students in the internal-reasons groups. Both distributions are roughly symmetric and similarly spread. External reasons Range - $24 - 5 = 19$ and Internal reasons Range = $30 - 12 = 17$. The External Reasons center (median) is about 17 and the Internal Reasons median is about 21.

45] Where do the young live? Below is a stemplot of the percent of residents aged 25 to 34 in each of the 50 states. As in the stemplot for older residents (page 35), the stems are whole percents, and the leaves are tenths of a percent. This time, each stem has been split in two, with values having leaves 0 through 4 placed on one stem, and values ending in 5 through 9 placed on another stem.

STEM	LEAF
11	44
11	66778
12	0134
12	666778888
13	0000001111444
13	7788999
14	0044
14	567
15	11
15	
16	0

Key: 12|1 means that 12.1% of that state's residents are aged 25 to 34.

KEY 11|4 = 11.4%

NOTICE:

• STEM PLOTS MUST have a key.

* **2 TYPES OF KEYS:**

① Key: STEM - ones digit
LEAF - tenths digit

② KEY: 11|4 = 11.4%

• LEAF ARE IN NUMERICAL ORDER

• widths of numbers are equal

Ⓐ We split to get a better understanding of the shape. IF we did not split, we would only have 6 bars.

Ⓑ Utah has the highest % at 16.0% 25-34, possibly due to Mormon church

Ⓒ The shape is roughly symmetric with the center around 13% and the spread of about 3.5% (min 11.4% and max 15.1)

(a) Why did we split stems?

(b) Utah has the highest percent of residents aged 25 to 34. What is that percent? Why do you think Utah has an unusually high percent of residents in this age group?

(c) Describe the shape, center, and spread of the distribution, ignoring Utah.

47) 630 670 740 650 710 740 720 700 650 600 780 780
790 810 830 860 860 900 810 790 790 960 870

Without Splitting

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

without Splitting

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

Key

6|3

means

630 mm of rain

with Splitting

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

← Split Stems Show more detail!

Ⓑ Shape is roughly symmetric, with median about 780 mm (784 mm exactly) spread is from 600 to 960 approximately (604 to 957 exactly)

Ⓒ El Niño appears to reduce monsoon rainfall. Monsoon rainfall was below average in 18 of the 23 El Niño years and exceeded 900 in only one of those years.