

Unit 8: Statistics
PRE-TEST

Find the Minimum, Maximum, Range, Mean, Median, and Mode for each data set.

1.

Shoe Size

8.5	7	8	7.5	7.5	7
10	7.5	7	8	11	10
10	8	7.5	9.5	11	

Write data in order least to greatest:

7, 7, 7, 7.5, 7.5, 7.5, 7.5, 8, 8, 8, 8.5, 9.5, 10, 10, 10, 11, 11

↑
min

↑
max

There's 17 #'s, the 9th # is the median.

Minimum First #	Maximum Last #	Range Max - min	Mean Sum = 145 ÷ Total #'s = 17	Median	Mode 7.5 appears 4x's
7	11	4	8.53	8	7.5

2.

Hours Slept

7	7.25	6.75	7	6.5	6.25
5.25	8.25	7.5	8.25	6	7.25
6.25	6.25	7.5	4.75	7.75	6.5
7.25	6.25	7			

Write data in order least to greatest.

4.75, 5.25, 6, 6.25, 6.25, 6.25, 6.25, 6.5, 6.5, 6.75, 7, 7, 7, 7.25, 7.25, 7.25

↑
min

7.5, 7.5, 7.75, 8.25, 8.25
↑
max

There's 21 numbers, the 11th # is the median

Minimum First #	Maximum Last #	Range Max - min	Mean Sum = 142.75 ÷ Total #'s = 21	Median	Mode 6.25 appears 4x's
4.75	8.25	3.5	6.80	7	6.25

Draw a dot plot for each data set.

3.

Age at First Job

14	16	15	18	16	17
13	13	17	15	18	15
	13	17	17	16	

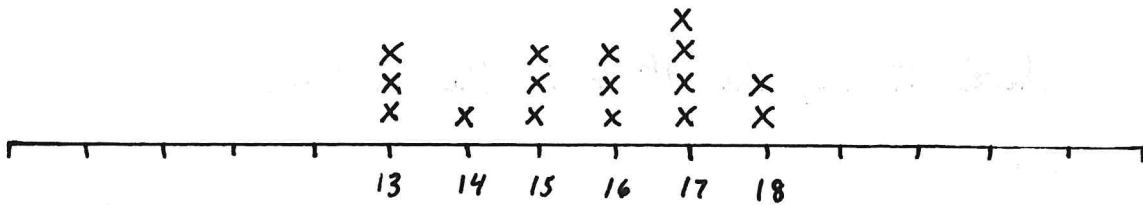
Write data in order least to greatest.

13, 13, 13, 14, 15, 15, 15, 16, 16, 16, 17, 17, 17, 17, 18, 18

↑
min

↑
max

$$\begin{aligned} \text{Range} &= \text{Max} - \text{Min} \\ &= 18 - 13 \\ &= 5 \end{aligned}$$



4.

Life Expectancy

Country	Years	Country	Years	Country	Years
Afghanistan	60	South Korea	81	Uganda	56
Eritrea	62	Turkmenistan	67	Congo (DRC)	50
Guinea-Bissau	50	Bangladesh	70	Iraq	69
Nicaragua	75	Mexico	77	Cyprus	81
Romania	74	Moldova	71		
Benin	59	Antigua & Barbuda	59		

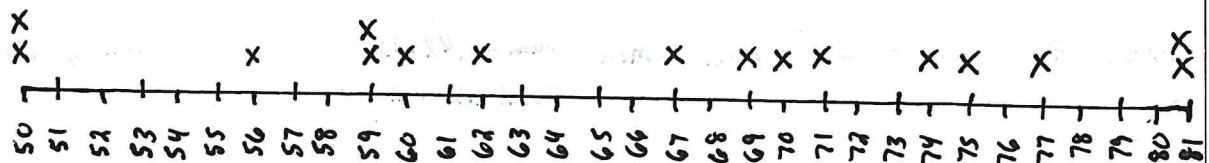
Write data in order least to greatest.

50, 50, 56, 59, 59, 60, 62, 67, 69, 70, 71, 74, 75, 77, 81, 81

↑
min

↑
max

$$\begin{aligned} \text{Range} &= \text{Max} - \text{Min} \\ &= 81 - 50 \\ &= 31 \end{aligned}$$



Draw a stem-and-leaf plot for each data set.

5.

Single Family Home Prices

\$470,500	\$474,200	\$450,800	\$460,700	\$467,600	\$468,000
\$453,600	\$455,000	\$505,100	\$462,900	\$475,500	\$478,800
\$487,700	\$476,900	\$475,600			

Can we base our stems on the hundred thousands place? No. All 4's & 5's
 Can we base our stems on the hundred & ten thousands places? Yes! Numbers range from 45 - 50 then. ROUND to nearest thousand (leafs)

Stem	Leaf
45	1, 4, 5
46	1, 3, 8, 8
47	1, 4, 6, 6, 7, 9
48	9
49	
50	5

Key 45|1 = \$451,000

6.

Basketball Tournament

School	Appearances	School	Appearances
Utah State	20	Hampton	5
North Carolina	46	Cal State Northridge	2
Kansas State	28	Butler	13
Central Connecticut State	3	Santa Clara	11
Drake	4	Colorado	13
Campbell	1	Columbia	3
Portland	2	Trinity	1
Canisius	4	Wake Forest	22

Since numbers are in tens place or less stems will be the tens digits.

Stem	Leaf
0	1, 1, 2, 2, 3, 3, 4, 4, 5
1	1, 3, 3
2	0, 2, 8
3	
4	6

Key 1|1 = 11

Draw a histogram for each data set.

7.

Hours Slept

5.5	6	4.75	6.75	9	6.75
7.75	5.5	6.25	6.5	7	6.5
7	8	8.25			

Write data in order least to greatest.

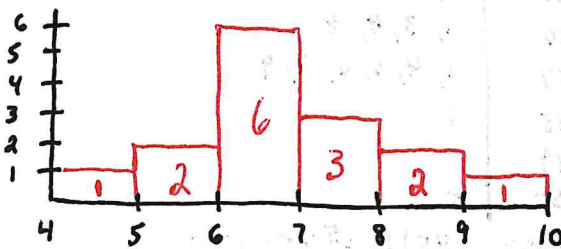
4.75, 5.5, 5.5, 6, 6.25, 6.5, 6.5, 6.75, 6.75, 7, 7, 7.75, 8, 8.25, 9

↑
min

$$\text{Range} = \text{Max} - \text{Min} = 9 - 4.75 = \boxed{4.25}$$

↑
max

Small enough range, intervals from 4-10 by 1's



8.

Sales Tax

State	Percent	State	Percent
Mississippi	7	Alabama	4
Georgia	4	Utah	4.7
Delaware	0	Arkansas	6.5
Illinois	6.25	Nebraska	5.5
Rhode Island	7	Connecticut	6.35
West Virginia	6	Hawaii	4
New Hampshire	0	Wisconsin	5
South Carolina	6		

Write data in order least to greatest.

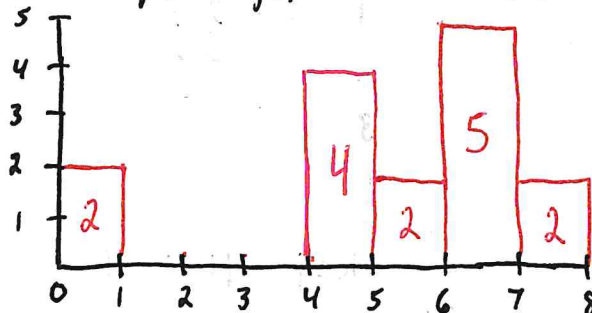
0, 0, 4, 4, 4, 4.7, 5, 5.5, 6, 6, 6.25, 6.35, 6.5, 7, 7

↑
min

$$\text{Range} = \text{Max} - \text{Min} = 7 - 0 = \boxed{7}$$

↑
max

Small enough range; intervals from 0-8 by 1's



Draw a box-and-whisker plot for each data set.

9.

Words in Book Titles

3	5	2	1	1	3
4	1	3	1	3	6
1	1	5	2		

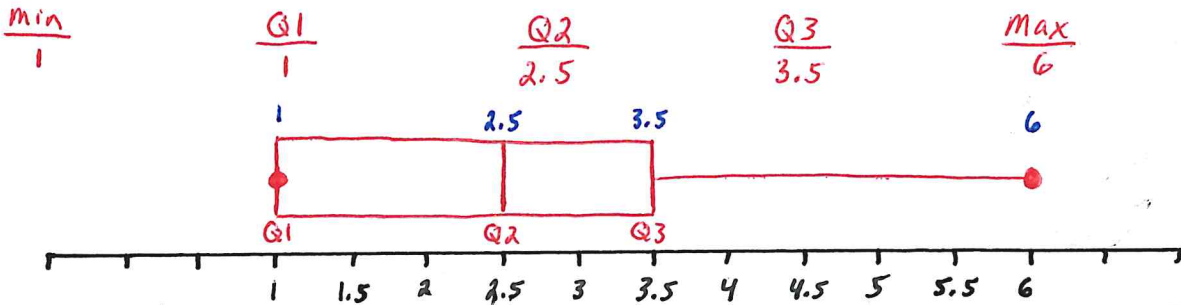
Write data in order least to greatest.

1, 1, 1, 1, 1, 1, 2, 2, 3, 3, 3, 3, 4, 5, 5, 6

IQR = 2.5

Lower Half

Upper half



10.

Life Expectancy

State	Years	State	Years
Oregon	82	New York	82.5
District of Columbia	77.9	Texas	80.3
Wyoming	78.4	Montana	74.1
Ohio	81	Louisiana	78.2
Oklahoma	78.2	Iowa	79.8
Arkansas	74.2	New Hampshire	80.1
South Carolina	78.3	Pennsylvania	81.6
Delaware	77	Idaho	81.4
Arizona	79.3		

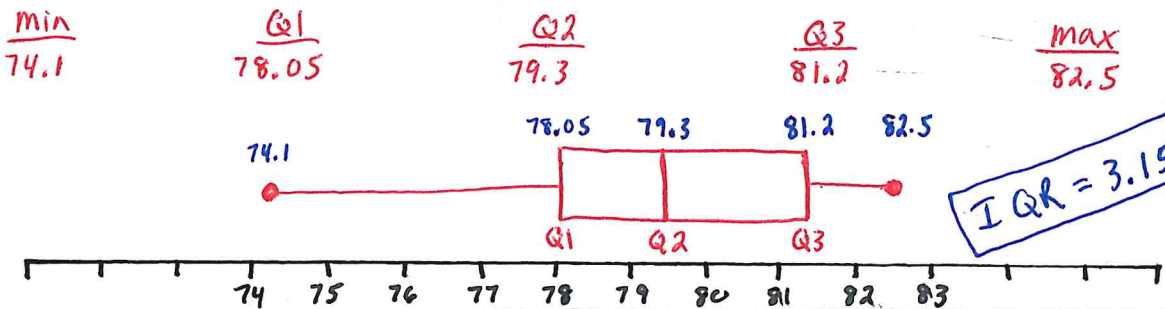
Write data in order least to greatest.

74.1, 74.2, 77, 77.9, 78.2, 78.2, 78.3, 78.4, 79.3, 79.8, 80.1, 80.3, 81, 81.4, 81.6, 82, 82.5

Lower Half

Median
Q2

Upper Half



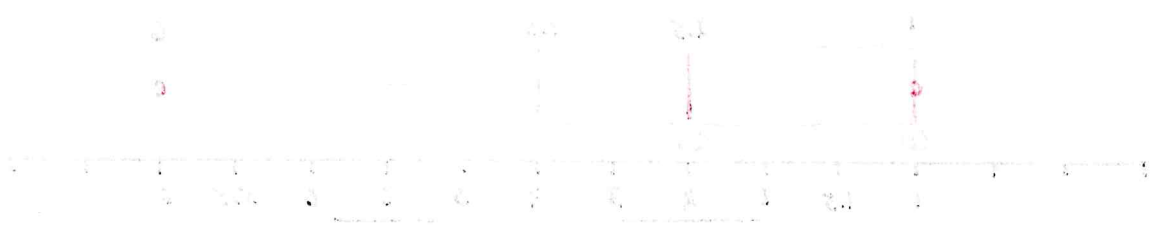
IQR = 3.15

$\frac{1}{2} \times 10 = 5$
 $\frac{1}{2} \times 10 = 5$
 $\frac{1}{2} \times 10 = 5$

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Upper half

Lower half



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Upper half

Lower half

$\frac{1}{2} \times 10 = 5$
 $\frac{1}{2} \times 10 = 5$
 $\frac{1}{2} \times 10 = 5$



5

470,500	becomes	471,000	Stem 47	Leaf 1
453,600	becomes	454,000	Stem 45	Leaf 4
487,700	becomes	488,000	Stem 48	Leaf 8
474,200	becomes	474,000	Stem 47	Leaf 4
455,000	becomes	455,000	Stem 45	Leaf 5
476,900	becomes	477,000	Stem 47	Leaf 7
450,800	becomes	451,000	Stem 45	Leaf 1
505,100	becomes	505,000	Stem 50	Leaf 5
475,600	becomes	476,000	Stem 47	Leaf 6
460,700	becomes	461,000	Stem 46	Leaf 1
462,900	becomes	463,000	Stem 46	Leaf 3
467,600	becomes	468,000	Stem 46	Leaf 8
475,500	becomes	476,000	Stem 47	Leaf 6
468,000	becomes	468,000	Stem 46	Leaf 8
478,800	becomes	479,000	Stem 47	Leaf 9

Stem	Leaf
45	4, 5, 1
46	1, 3, 8, 8
47	1, 4, 7, 6, 6, 9
48	8
49	
50	5

⑥

20	Stem 2	Leaf 0
46	Stem 4	Leaf 6
28	Stem 2	Leaf 8
3	Stem 0	Leaf 3
4	Stem 0	Leaf 4
1	Stem 0	Leaf 1
2	Stem 0	Leaf 2
4	Stem 0	Leaf 4
5	Stem 0	Leaf 5
2	Stem 0	Leaf 2
13	Stem 1	Leaf 3
11	Stem 1	Leaf 1
13	Stem 1	Leaf 3
3	Stem 0	Leaf 3
1	Stem 0	Leaf 1
22	Stem 2	Leaf 2

Stem	Leaf
0	3, 4, 1, 2, 4, 5, 2, 3, 1
1	3, 1, 3
2	0, 8, 2
3	
4	6

9) 16 total numbers

Lower half of data (8 numbers)

1, 1, 1, 1, 1, 1, 2, 2
min ↑ Lower Quartile (Q1)

$$\frac{1+1}{2} = \frac{2}{2} = \boxed{1}$$

Median (Q2)

$$\frac{\text{Last of Lower} + \text{First of upper}}{2} = \frac{2+3}{2} = \frac{5}{2} = \boxed{2.5}$$

Upper half of data (8 numbers)

3, 3, 3, 3, 4, 5, 5, 6
↑ Upper Quartile (Q3) max

$$\frac{3+4}{2} = \frac{7}{2} = \boxed{3.5}$$

$$IQR = Q3 - Q1 = 3.5 - 1 = \boxed{2.5}$$

$$\text{Range} = \text{Max} - \text{Min} = 6 - 1 = \boxed{5}$$

10) 17 total numbers

Lower half of data (8 numbers)

74.1, 74.2, 77, 77.9, 78.2, 78.2, 78.3, 78.4
min ↑ Lower Quartile (Q1)

$$\frac{78.2 + 77.9}{2} = \frac{156.1}{2} = \boxed{78.05}$$

Median (Q2)

$$\boxed{79.3}$$

Upper half of data (8 numbers)

79.8, 80.1, 80.3, 81, 81.4, 81.6, 82, 82.5
↑ Upper Quartile (Q3) max

$$\frac{81.4 + 81}{2} = \frac{162.4}{2} = \boxed{81.2}$$

$$IQR = Q3 - Q1 = 81.2 - 78.05 = \boxed{3.15}$$

$$\text{Range} = \text{Max} - \text{Min} = 82.5 - 74.1 = \boxed{8.4}$$

