

Measures of Central Tendencies

Unit 8: Statistics

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

1.

Hits in a Round of Hacky Sack

15	4	8	7	3	10
	8	4	9	5	

Minimum	Maximum	Range	Mean	Median	Mode
3	15	12	7.3	7.5	4 & 8

2.

Goals in a Hockey Game

8	5	7	5	5	3
5	3	10	7	9	

Minimum	Maximum	Range	Mean	Median	Mode
3	10	7	6.09	5	5

3.

Car Weights (lb)

3,550	3,675	3,025	3,510	3,390	3,470
2,760	4,095	1,905	3,675	2,815	2,350
3,305	2,500	3,315	4,115	3,420	

Minimum	Maximum	Range	Mean	Median	Mode
1905	4115	2210	3227.94	3390	3675

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

4.

Annual Precipitation (Centimeters)

59	83	147	132	92	121
113	112	109	71	147	110
	123	73	92	136	

Minimum	Maximum	Range	Mean	Median	Mode
59	147	88	107.5	111	92 & 147

5.

Shoe Size

8	8	5	8	9	7.5
7	7.5	6	9	8.5	8.5
7.5	9	9.5	7.5	8	7.5
	9.5	8	7.5	7.5	

Minimum	Maximum	Range	Mean	Median	Mode
5	9.5	4.5	7.89	8	7.5

6.

Annual Precipitation (Centimeters)

49	47	100	106	114	105
103	80	104	114	151	56
117	120	131	81	75	105
	157	78	94		

Minimum	Maximum	Range	Mean	Median	Mode
47	157	110	99.38	104	105 & 114

① Place all data in numerical order least to greatest.

3, 4, 4, 5, 7, 8, 8, 9, 10, 15

↑

The first # is
the minimum.

↑

The last # is
the maximum.

Find the range by taking the maximum
and subtracting the minimum.

$$15 - 3 = \boxed{12}$$

Find the mean by adding all numbers in the
data, and dividing by the amount of
numbers you added together.

$$\frac{3 + 4 + 4 + 5 + 7 + 8 + 8 + 9 + 10 + 15}{10 \text{ numbers}} = \frac{73}{10} = \boxed{7.3}$$

Find the median by finding the middle number
after ordering them above.

- If an odd amount of numbers = the middle #
- If an even amount of numbers =
the mean of the middle 2 numbers.

$$\frac{7 + 8}{2} = \frac{15}{2} = \boxed{7.5}$$

The mode is the number(s) that appear the
most in the data.

Two numbers appear twice 4 and 8

② Order Data:

3, 3, 5, 5, 5, 5, 7, 7, 8, 9, 10

$$\text{Minimum} = \boxed{3}$$

$$\text{Maximum} = \boxed{10}$$

$$\text{Range} = \frac{10 - 3}{\boxed{7}}$$

Mean:

$$\frac{3 + 3 + 5 + 5 + 5 + 5 + 7 + 7 + 8 + 9 + 10}{11} = \frac{67}{11}$$

6.0909090909

Round to 2 decimal places (hundredths)

$\boxed{6.09}$

Median:

$$\text{middle \#} = \boxed{5}$$

Mode:

$$\text{Appearing four times} = \boxed{5}$$

③ Order data:

1905, 2350, 2500, 2760, 2815, 3025, 3305, 3315
3390, 3420, 3470, 3510, 3550, 3675, 3675, 4095
4115

$$\text{Minimum} = \boxed{1905}$$

$$\text{Maximum} = \boxed{4115}$$

$$\text{Range} = \frac{4115}{-1905} = \boxed{2210}$$

Mean:

$$1905 + 2350 + 2500 + 2760 + 2815 + 3025 + 3305 + 3315 = 21975$$

$$3390 + 3420 + 3470 + 3510 + 3550 + 3675 + 3675 + 4095 = 28785$$

$$4115 = + \frac{4115}{54875}$$

$$\frac{54875}{17} = 3227.9411764706$$

Round to 2 decimal places (hundredths)

$$\boxed{3227.94}$$

Median:

Odd # of numbers in the set.

$$\boxed{3390}$$

Mode:

Appearing twice $\boxed{3675}$

④ Order Data:

59, 71, 73, 83, 92, 92, 109, 110, 112, 113, 121, 123,
132, 136, 147, 147

$$\text{Minimum} = \boxed{59}$$

$$\text{Maximum} = \boxed{147}$$

$$\text{Range} = \frac{147}{-59} = \boxed{88}$$

Mean:

$$59 + 71 + 73 + 83 + 92 + 92 + 109 + 110 + 112 + 113 = 914$$

$$121 + 123 + 132 + 136 + 147 + 147 = \frac{+806}{1720}$$

$$\frac{1720}{16} = \boxed{107.5}$$

Median:

$$\frac{110 + 112}{2} = \frac{222}{2} = \boxed{111}$$

Mode:

Appearing twice each $\boxed{92 \text{ and } 147}$

⑤ Order Data:

5, 6, 7, 7.5, 7.5, 7.5, 7.5, 7.5, 7.5, 7.5, 8
8, 8, 8, 8, 8.5, 8.5, 9, 9, 9, 9.5, 9.5

$$\text{Minimum} = \boxed{5}$$

$$\text{Maximum} = \boxed{9.5}$$

$$\text{Range} = \frac{9.5 - 5}{\boxed{4.5}}$$

Mean:

$$5 + 6 + 7 + 7.5 + 7.5 + 7.5 + 7.5 + 7.5 + 7.5 + 7.5 = 70.5$$

$$8 + 8 + 8 + 8 + 8 + 8.5 + 8.5 + 9 + 9 + 9 + 9.5 + 9.5 = \frac{+ 103}{173.5}$$

$$\frac{173.5}{22} = 7.8863636364$$

Round to 2 decimal places (hundredths)

$$\boxed{7.89}$$

Median:

$$\frac{8 + 8}{2} = \frac{16}{2} = \boxed{8}$$

Mode:

Appearing seven times $\boxed{7.5}$

⑥ Order Data:

47, 49, 56, 75, 78, 80, 81, 94, 100, 103, 104, 105
105, 106, 114, 114, 117, 120, 131, 151, 157

$$\begin{aligned} \text{Minimum} &= \boxed{47} \\ \text{Maximum} &= \boxed{157} \end{aligned}$$

$$\text{Range} = \frac{157}{-47} = \boxed{110}$$

Mean:

$$\begin{aligned} 47 + 49 + 56 + 75 + 78 + 80 + 81 + 94 + 100 + 103 &= 763 \\ 104 + 105 + 105 + 106 + 114 + 114 + 117 + 120 + 131 &= 1016 \\ 151 + 157 &= 308 \\ \hline &= 2087 \end{aligned}$$

$$\frac{2087}{21} = 99.380952381$$

Round to 2 decimal places (hundredths)

$$\boxed{99.38}$$

Median:

Odd # of numbers in the set

$$\boxed{104}$$

Mode:

Appearing twice each

$$\boxed{105 \text{ and } 114}$$