

U5 – Data Analysis

Name: _____

Instructions: Using a pencil, complete the following questions as you work through the related lessons. Show ALL work as is explained in the lessons. Do your best and ask questions if you don't understand anything!

5.1 **Averages**

1. Name the three different types of averages known as the central tendencies.

2. Which measure of central tendency is best suited to the following situations?
 - a. The most common size of t-shirt sold at a concert.

 - b. The average salary earned by workers at a local industrial plant.

 - c. The election of a student council president in your school.

 - d. The middle height of a grade 8 class.

 - e. The favourite colour amongst all your classmates.

 - f. Canada's most popular baby name.

 - g. A hockey goalie's save percentage.

 - h. Your test average in this course.

5.2 Mean and Range

3. Determine the mean for each of the following sets of data. Leave your answer rounded to the nearest tenth, if necessary.
- a. 7, 9, 5, 8, 4, 9

 - b. 10, 9, 8, 7, 6

 - c. 3, 5, 6, 7, 3, 4, 1, 2, 4, 4

 - d. 3, 9, 3, 8, 11, 2

 - e. 8, 8, 4, 9, 11, 4

 - f. 9, 11, 8, 6, 2, 6

 - g. 6, 6, 11, 10, 12

 - h. 12, 15, 17, 12, 13, 13, 18, 15, 16, 11, 13

- i. 7, 6, 7, 3, 4, 5, 7, 6, 3, 7, 5, 7

 - j. 40, 40, 70, 30, 30, 50, 60, 30, 60, 80, 30, 70, 50
4. Determine the mean for each of the following sets of data, and identify any outlier. Leave your answer rounded to the nearest tenth, if necessary.
- a. 9, 4, 3, 5, 10, 2, 8

 - b. 11, 8, 9, 4, 12

 - c. 12, 9, 9, 4, 6, 7, 3

 - d. 13, 8, 5, 3, 5

 - e. 2, 5, 6, 2, 14, 3

 - f. 10, 4, 10, 9, 4

g. 3, 5, 6, 7, 3, 28, 4, 1, 2, 4, 4

h. 12, 15, 17, 12, 13, 13, 18, 15, 37, 16, 11, 13

i. 7, 31, 6, 7, 3, 4, 5, 7, 6, 3, 7, 5, 7

j. 40, 40, 70, 30, 30, 220, 50, 60, 30, 60, 80, 30, 70, 50

5. What is the range for each of the following sets of data?

a) 3, 5, 6, 7, 3, 4, 1, 2, 4, 4

b) 12, 15, 17, 12, 13, 13, 18, 15, 16, 11, 13

c) 7, 6, 7, 3, 4, 5, 7, 6, 3, 7, 5, 7

d) 40, 40, 70, 30, 30, 50, 60, 30, 60, 80, 30, 70, 50

5.3 **Median**

6. Determine the median for each of the following sets of data. Remember, if you have an even number in the data set, add the two middle numbers and divide by two to obtain the median.

a. 1, 6, 5, 4, 5, 6, 2, 3, 2, 4, 3, 5, 6, 2, 3, 1, 5, 3, 3

b. 34, 45, 27, 56, 41, 42, 63, 51, 39, 49, 45, 64, 61, 35, 67

c. 10, 40, 50, 20, 50, 60, 10, 80, 30, 40, 60, 20, 30, 80, 70, 20

d. 12, 18, 13, 11, 16, 16, 15, 19, 15, 14, 13, 17, 16, 12, 13, 11

5.4 **Mode**

7. Determine the mode for each of the following sets of data.

a. 2, 2, 5, 8, 2, 5

b. 9, 5, 2, 9, 9, 1

c. 6, 6, 0, 4, 10, 4, 6

d. 11, 4, 8, 4, 12, 1

e. 5, 4, 5, 2, 9, 7, 2

f. 12, 7, 3, 3, 11, 3

g. 1, 6, 5, 4, 5, 6, 2, 3, 2, 4, 3, 5, 6, 2, 3, 1, 5, 3, 3

h. 34, 45, 27, 56, 41, 42, 63, 51, 39, 49, 45, 64, 61, 35, 67

i. 10, 40, 50, 20, 50, 60, 10, 80, 30, 40, 60, 20, 30, 80, 70, 20

j. 12, 18, 13, 11, 16, 16, 15, 19, 15, 14, 13, 17, 16, 12, 13, 11

8. Determine the mean, median, mode and range for each of the following sets of data.

- a. 20, 16, 7, 6, 7, 8, 19, 13

Mean ____ Median ____ Mode _____ Range ____

- b. 20, 16, 19, 5, 12, 13, 9, 15, 17, 19, 15, 8

Mean ____ Median ____ Mode _____ Range ____

- c. 14, 20, 15, 18, 19, 13, 19, 11, 8, 11, 17

Mean ____ Median ____ Mode _____ Range ____

- d. 18, 15, 9, 17, 12, 14, 6

Mean ____ Median ____ Mode _____ Range ____

- e. 15, 7, 6, 19, 11, 10, 20, 16

Mean ____ Median ____ Mode _____ Range ____

f. 12, 14, 11, 10, 7, 17, 17, 13, 16

Mean ____ Median ____ Mode _____ Range ____

g. 20, 16, 20, 19, 17, 15, 13, 16, 16, 18

Mean ____ Median ____ Mode _____ Range ____

h. 18, 16, 19, 10, 15, 9, 12, 13, 19, 6, 9

Mean ____ Median ____ Mode _____ Range ____

i. 7, 12, 18, 6, 10, 13, 8, 8, 17, 20, 14, 11

Mean ____ Median ____ Mode _____ Range ____

j. 8, 8, 14, 17, 6, 11, 8, 20, 14, 14

Mean ____ Median ____ Mode _____ Range ____

9. [Challenge!]

ANSWERS

1. Mean, median and mode
2. **mean:** b), g), h) **median:** d), f) **mode:** a), c), e)
3. a) 7 b) 8 c) 3.9 d) 6 e) 7.3 f) 7 g) 9 h) 14.1 i) 5.2 j) 49.2
4. a) 5.9, no outliers b) 8.8, outlier: 4 c) 7.1, no outliers d) 6.8, outlier:13 e) 5.3, outlier: 14
 f) 7.4, outlier:4 g) 6.1, outlier: 28 h) 15.8, outlier: 37 i) 7.5, outlier: 31
 j) 6.1, outlier: 220
5. a) 6 b) 7 c) 4 d) 50
6. a) 3.5 b) 45 c) 45 d) 15
7. a) 2 b) 9 c) 6 d) 4 e) 2 and 5 f) 3 g) 3 h) 45 i) 20 j) 13 and 16
8. a) mean = 12, median = 13, mode = 7, range = 14
 b) mean = 14, median = 14, mode = 15 and 19, range = 15
 c) mean = 15, median = 15, mode = 11 and 19, range = 12
 d) mean = 13, median = 14, mode = none, range = 12
 e) mean = 13, median = 13, mode = none, range = 14
 f) mean = 13, median = 12.5, mode = 17, range = 10
 g) mean = 17, median = 17, mode = 16, range = 7
 h) mean = 13.3, median = 13, mode = 9 and 19, range = 13
 i) mean = 12, median = 12, mode = 8, range = 14
 j) mean = 12, median = 12.5, mode = 8 and 14, range = 14
9. Answers will vary