

Skill Builder

1 An Introduction to Statistics – Important Definitions **EVALUATED**



- 1** Identify the type of variable in the following situation.

“The residents in a retirement home were asked what their favourite season was”

- 2** Identify the type of variable in the following situation.

“Students in a math class were asked how many mistakes they made on their last test.”

- 3** In the following situation, determine which is preferable, a census, a survey, or a study.

“Wayne wants to ask each member of his bird watching club how many birds they identified last week.”

- 4** Does the following situation describe a census, a survey, or a study?

“A team of scientists are asked to determine the concentration of mercury levels in a town’s lakes and streams after an industrial accident.”

- 5** Which data gathering method gives the most precise description of the characteristics of a population?
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- 6** Which data gathering method achieves the quickest results with the lowest costs?
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- 7** Which data gathering method has a survey rate between zero and one?
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- 8** Which data gathering method does not have a survey rate associated with it?
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- 9** The town of Hudson organized a survey to determine what type of food the residents wanted to be served at the Canada Day celebration in July. The town has a total of 5000 residents and they surveyed 200 of them. Calculate the survey rate.
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- 10** If the survey rate of a particular survey was 0.3 and the total population was 400, what was the size of the sample of this survey?
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1 Rewrite each survey question to improve it.

a. What type of vehicle does your family have?

- van SUV sedan

b. In your opinion, how would you rate the speed and accuracy of your work?

- Excellent Good Fair Poor

2 Which survey question is better? Explain why.

a. Don't you think teenagers caught with cigarettes should be fined in order to prevent them from smoking?

- Yes
 No

b. Teenagers caught with cigarettes should be fined.

- Strongly disagree
 Disagree
 Agree
 Strongly agree

3 Monique gathered the following data on the question, "How confident are you using presentation software like PowerPoint?" Summarize the data in the table on the right.

No.	B/G	Response	Response	Boys	Girls	Total
1	G	Very confident	Not confident			
2	B	Somewhat confident	Somewhat confident			
3	B	Very confident	Very confident			
4	G	Somewhat confident	Total			
5	B	Somewhat confident				
6	G	Somewhat confident				
7	B	Very confident				
8	G	Very confident				
9	B	Not confident				

4 Monique asked students to finish this statement, "I play sports ____". Her data is collected in the table below. Summarize the data in the table on the right.

#	B/G	Response	Response	Boys	Girls	Total
1	G	at least once a week	every day			
2	B	every day	at least once a week			
3	G	every day	at least once a month			
4	G	at least once a week	at least once a year			
5	B	at least once a week	never			
6	G	at least once a week	Total			
7	G	at least once a month				
8	B	never				
9	B	at least once a week				
10	B	every day				

3 Calculating the Mean and the Range

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- 1 Calculate the mean for the following set of numbers.

$$S = \{ 5, 8, 8, 9, 11, 14, 15 \}$$

My Calculations									

- 2 Calculate the mean for the following set of numbers.

$$S = \{ 3, 6, 1, 3, 4, 5 \}$$

My Calculations									

- 3 Maria had an average of 74 last term in Math. She had 5 tests that were all worth the same amount, but she can only remember the results for 4 of the 5 tests. The 4 results were 65, 70, 72, and 78. What did Maria get on the fifth test?

My Calculations									

- 4 This term, Joe has written 4 Math tests all worth the same amount. After the first 3 tests, Joe's average is 88%. What mark does Joe need to get on his fourth test to have an overall average of 90% for the term?

My Calculations									

- 5 Determine the range of a number set if the minimum value is 17 and the maximum value is 42.

My Calculations									

- 6 Determine the minimum value in a number set if the range is 8 and the maximum value is 35.

My Calculations									

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- 7** Determine the range of the following set of numbers.

$$S = \{3, 3, 4, 5, 8, 9, 9, 10, 11, 12, 12\}$$

My Calculations									

- 8** Determine the range of the following set of numbers.

$$S = \{18, 14, 20, 5, 24, 10, 30, 27, 21\}$$

My Calculations									

- 9** The following table displays the average temperatures month by month for the cities of Montreal and Vancouver. Which city has the higher average temperature? Which city has the largest range of temperature during the year?

Month	J	F	M	A	M	J	J	A	S	O	N	D
City												
Montreal	-9	-7	-1	7	14	19	22	21	16	9	3	-6
Vancouver	4	5	6	8	12	15	17	18	14	10	6	4

Temperatures are in Celsius

My Calculations									

- 10** Matthew wrote 4 Math tests last term. His average test score was 73%, and the range of his grades was 20. Matthew's lowest mark was 11% below his average. One of his marks was 3% above his average. What were Matthew's 4 Math test results last term?

My Calculations									

Name : _____ Score : _____

Teacher : _____ Date : _____

Mean, Mode, Median, and Range

1) 19, 20, 20, 13, 19, 11

Mean _____ Mode _____ Range _____

6) 10, 17, 11, 10, 11, 8, 20, 14, 18, 11

Mean _____ Mode _____ Range _____

2) 16, 14, 11, 14, 12, 16, 8, 6, 17, 16

Mean _____ Mode _____ Range _____

7) 20, 10, 9, 20, 14, 10, 6, 7

Mean _____ Mode _____ Range _____

3) 12, 14, 6, 16, 13, 8, 18, 15, 15

Mean _____ Mode _____ Range _____

8) 17, 16, 9, 12, 6, 6

Mean _____ Mode _____ Range _____

4) 19, 15, 18, 19, 19

Mean _____ Mode _____ Range _____

9) 14, 18, 17, 12, 10, 20, 14

Mean _____ Mode _____ Range _____

5) 14, 14, 8, 7, 12

Mean _____ Mode _____ Range _____

10) 15, 16, 10, 20, 19, 8, 17

Mean _____ Mode _____ Range _____