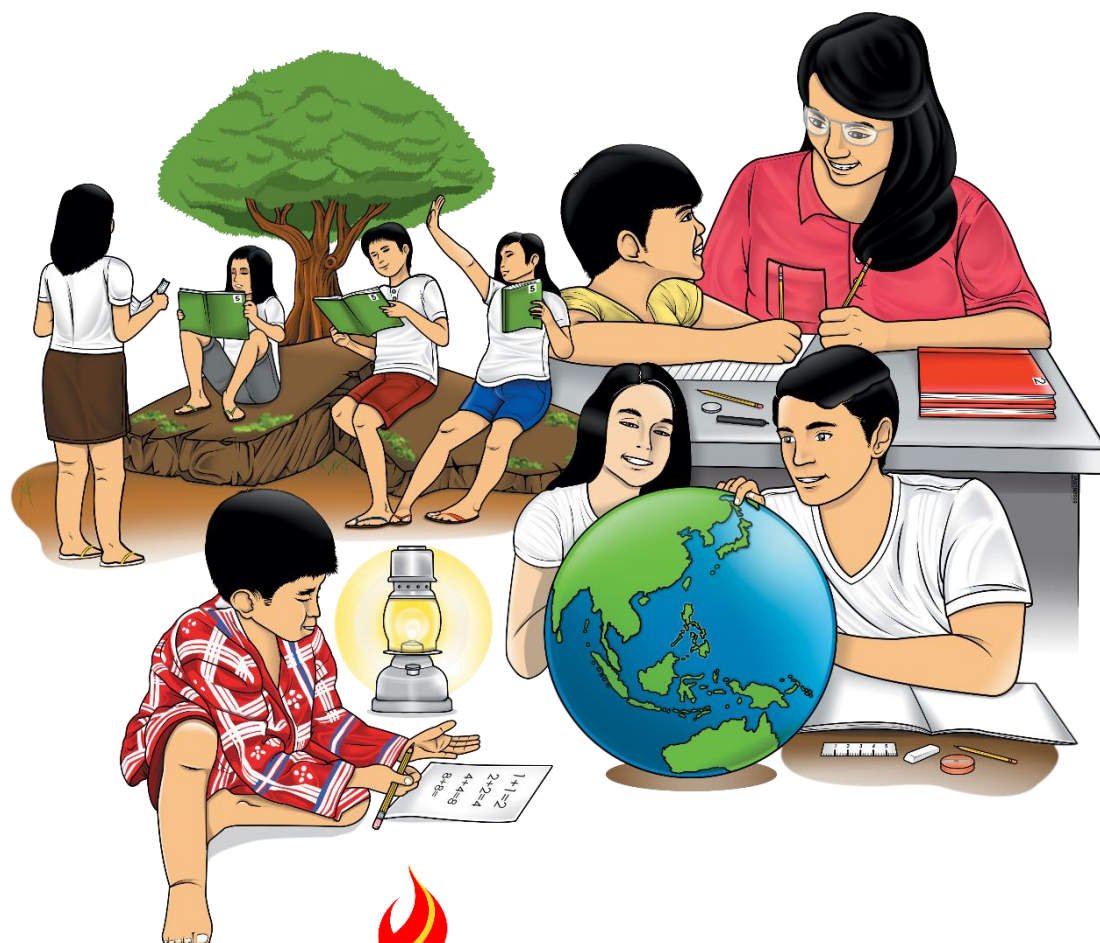


Mathematics

Quarter 4 – Module 4: Measures of Central Tendency



Mathematics– Grade 7
Alternative Delivery Mode
Quarter 4 – Module 4: Measures of Central Tendency
First Edition, 2020

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Mathematics

Quarter 4 – Module 4: Measures of Central Tendency

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



What I Need to Know

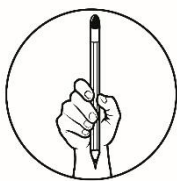
This module was designed and written with you in mind. It is here to help you learn about the measures of central tendency of grouped and ungrouped data. This module is designed to be self-sufficient for the current learning situation. The language used recognizes your vocabulary level. The lessons are arranged to follow the standard sequence of the course in the curriculum guide. However, the order in which you read them can be changed to correspond with the textbook you are now using.

The module is divided into two lessons, namely:

- Lesson 1 – Measures of Central Tendency of Ungrouped Data
- Lesson 2 – Measure of Central Tendency of Grouped Data

After going through this module, you are expected to:

1. illustrate the measures of central tendency (mean, median and mode) of statistical data; and
2. calculate the measures of central tendency of the ungrouped and grouped

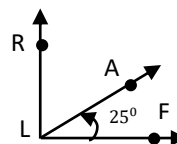


What I Know

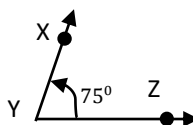
Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

- Which of the following statements is TRUE?
 - An angle is formed by two non collinear rays.
 - Two points determine an angle.
 - An angle divides a plane into two distinct parts.
 - Two distinct angles cannot share an interior point.
- What is the sum of the measures of supplementary angles?
 - 45°
 - 50°
 - 90°
 - 180°
- On the figures at the right, $\angle RLA$ and $\angle ALF$ are complementary angles. If $m\angle ALF = 25$, then what is the measure of $m\angle RLA$?

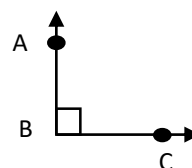
- 25
- 55
- 65
- 155



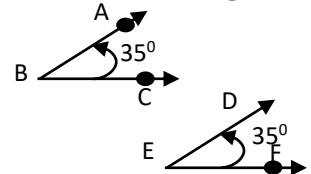
- Which of the following pairs of angles has sum equal to 90° ?
 - complementary angles
 - linear pairs
 - obtuse angles
 - supplementary angles
- Which of the following angles has measure less than 90° but greater than 0° ?
 - acute angle
 - obtuse angle
 - right angle
 - straight angle
- In the figure at the right, $m\angle XYZ = 75^\circ$, what kind of angle does it form?
 - acute angle
 - obtuse angle
 - right angle
 - straight angle



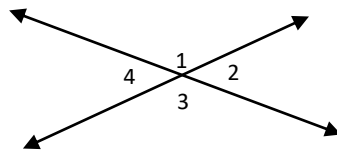
- All of the following are measures of an obtuse angle EXCEPT:
 - 95°
 - 110°
 - 120°
 - 190°
- Given the figure at the right, if $\angle ABC = 90^\circ$, which of the following statements is TRUE?
 - $\angle ABC$ is an acute angle.
 - $\angle ABC$ is a right angle.
 - $\angle ABC$ is an obtuse angle.
 - $\angle ABC$ has no known classification.



9. Which of the following is a measure of an acute angle?
- 170°
 - 150°
 - 90°
 - 80°
10. If $m\angle MAT = 135^{\circ}$ and $m\angle HAE = 45^{\circ}$, then which of the following could describe the two angles?
- complementary angles
 - vertical angles
 - supplementary angles
 - forms a right angle
11. Given the figures at the right, what can you conclude about the two angles?
- linear pairs
 - congruent angles
 - vertical angles
 - perpendicular to each other
12. Which of the following is true about parallel lines?
- coplanar lines that do not intersect no matter how far they are extended
 - two lines with a common point
 - three or more lines that have a common point
 - straight lines that do not intersect and are not on the same plane



For items No. 13 – 14, consider the figure below:



13. Which of the following are vertical angles?
- $\angle 1$ and $\angle 2$
 - $\angle 1$ and $\angle 4$
 - $\angle 2$ and $\angle 4$
 - $\angle 2$ and $\angle 3$
14. Which of the following form a linear pair?
- $\angle 1$ and $\angle 2$
 - $\angle 1$ and $\angle 3$
 - $\angle 2$ and $\angle 4$
 - None of these.
15. Which of the following describes the perpendicular lines?
- lines that intersect to form a right angle
 - lines that meet at a common point
 - lines that do not meet
 - lines that meet to form complementary angles

Lesson

1

Measures of Central Tendency of Ungrouped Data

Let us begin with the exploratory activities that will introduce you to the basic concepts of measures of tendency and how these concepts are applied in real-life. Good luck dear!

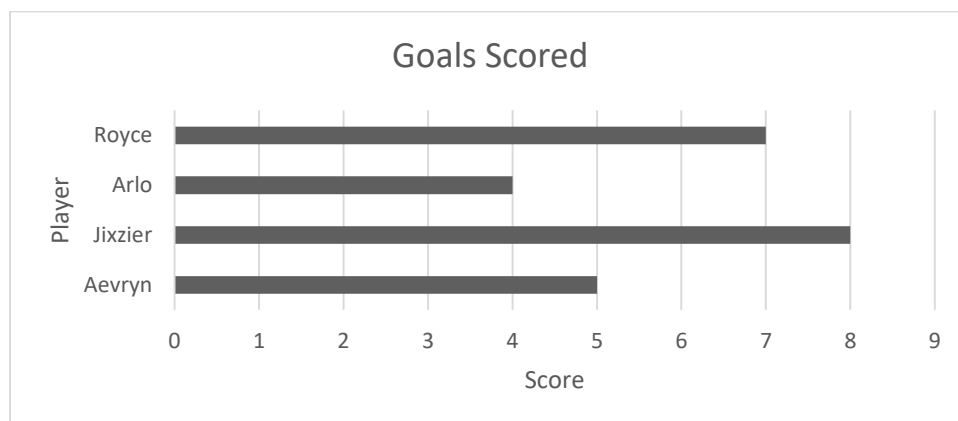
After going through this module, you are expected to:

1. illustrate the measures of central tendency (mean, median and mode) of ungrouped data; and
2. calculate the measures of central tendency of the ungrouped data.



What's In

The bar graph shows the goals scored by the students in Grade 7 Tsiko in Soccer game during their performance task in MAPEH subject. Read and answer the given questions based on the graph.



- a. How many goals did Aevryn, Arlo, Jixzier and Royce score individually?
- b. Who scored the most goals?
- c. Who scored the fewest goals?
- d. Who scored more goals, Arlo or Royce?
- e. Who scored fewer goals, Aevryn or Jixzier?

- f. How many more goals did Jixzier score than Royce?
- g. How many more goals did Aevryn score than Arlo?

The activity that you just accomplished provided you situations where the basic concepts of statistics are applied. In this module, you will do activities that will help you in answering the question “How can I make use of the representations and descriptions of a given set of data?”.



What's New

Perform the following activities to check your understanding about averages. After doing the activities in this section, it is expected that you will be able to answer the question, “What is the best way to measure a given set of data?”.

Nine students from Grade 7 Bayabas obtained the following scores in a math quiz:

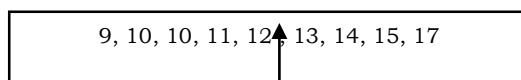
10, 17, 12, 14, 15, 9, 13, 10, 11

Find the value of mean, median and mode of the given set of data.

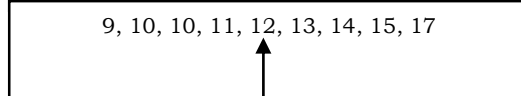
Directions

1. Arranging the scores in increasing order: 9, 10, 10, 11, 12, 13, 14, 15, 17.
2. Compute for the average of the scores.
3. Identify the middle score.
4. What is the most frequently occurring scores?

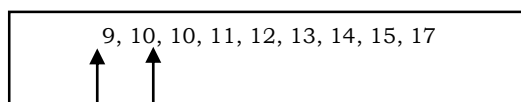
The mean is **12.3**



The median is **12**



The mode is **10**



Observe how the mean, median and mode of the scores were obtained. Complete the statement below.

- a. The mean 12.3 was obtained by _____.
- b. The median 12 is the _____.
- c. The mode 10 is the _____.

From these activities, you will see that the values are made to represent or describe a given set of data. You will know more about the characteristics of each type of measures of central tendency in the next activities and discussions.



What is It

Statisticians analyzed data to obtain useful information from them. An important part of data analysis is to find the average value, the middle value, or the most frequent value of a set of data.

Measures of central tendency is any measure indicating the center of a set data. The **mean**, **median** and **mode** are the three kinds of averages.

The Mean

The **mean** (also known as the arithmetic mean/average) is the most commonly used measure of central position. It is the sum of measures x divided by the number N of measures in a variable. It is symbolized as \bar{X} (read as “X- bar”). To find the *mean* of an ungrouped data, use the formula

$$\bar{X} = \frac{\Sigma x}{N}$$

where \bar{X} read as “X-bar” for the mean, Σx = the summation of x (sum of the measures) and N is the number of values in the data set.

Example 1.

In a survey of 10 households, the number of children was found to be 4, 5, 5, 4, 3, 6, 2, 6, 4, 1. Calculate the mean number of children per household.

Solution:

$$\bar{X} = \frac{\Sigma x}{N}$$

$$\bar{X} = \frac{4 + 5 + 5 + 4 + 3 + 6 + 2 + 6 + 4 + 1}{10}$$

$$\bar{X} = \frac{40}{10}$$

$$\bar{X} = 4$$

Hence, the average number of children per household is 4.

Example 2.

The Royce gas station owner records the number of vehicles which visit his premises for 12 days. The numbers are: 304, 279, 314, 257, 302, 223, 249, 210, 289, 302, 209, 290. Find the mean number of vehicles per day.

Solution:

$$\bar{X} = \frac{\Sigma x}{N}$$

$$\bar{X} = \frac{304 + 279 + 314 + 257 + 302 + 223 + 249 + 210 + 289 + 302 + 209 + 290}{12}$$

$$\bar{X} = \frac{3228}{12}$$

$$\bar{X} = 269$$

Hence, the average number of vehicles per day is 269.

Example 3.

A group of students in section Calathea obtained the following scores in math quiz: 2,4,6,5,10,8,9,7,8. What is the mean score of the students?

Solution:

$$\bar{X} = \frac{\Sigma x}{N}$$

$$\bar{X} = \frac{2 + 4 + 6 + 5 + 10 + 8 + 9 + 7 + 8}{9}$$

$$\bar{X} = \frac{59}{9}$$

$$\bar{X} = 6.56$$

Hence, the average score of students in math quiz is 6.56.

The Median

The **median** is the middle value in a set of data. It is symbolized as (\tilde{X}) (read as “X – tilde”). To find a median, arranged the scores either in increasing or decreasing order and then find the middle score.

Example 1:

Find the median of the following set of numbers.

8, 14, 8, 45, 1, 31, 16, 40, 12, 30, 42, 30, 24

Solution:

Arrange the numbers from least to greatest or greatest to least. In case of an odd number of terms, find the middle term.

1 8 8 12 14 16 **24** 30 30 31 40 42 45
 $N = 13$

We can see from the arranged numbers that the middle value is 24.

Since the middle value is the median, then the median is 24.

Example 2.

In a basketball game between ABC High School and XYZ High School, the ABC players' individual points were 3, 13, 7, 5, 21, 23, 14, 11, 23 and 8. Calculate the median of the following scores.

Solution:

Arrange the numbers from least to greatest or greatest to least.

3 5 7 8 **11** **13** 14 21 23 23

In case of an even number of terms the average of the middle values is the median.

$N = 10$

Since the number of measures is even, then the median is the average of the two middle scores.

$$\tilde{X} = \frac{x_1 + x_2}{2}$$

$$\tilde{X} = \frac{11 + 13}{2}$$

$$\tilde{X} = \frac{24}{2}$$

$$\tilde{X} = 12$$

Hence, the median score is 12.

Example 3.

The following are the ages of students in a vocational class: 32, 43, 39, 28, 42, 31. Find the median age of the students.

Solution:

Arrange the numbers from least to greatest or greatest to least.

28 31 **32** **39** 42 43

$N = 6$. In case of an even number of terms the average of the middle values is the median.

$$\tilde{X} = \frac{x_1 + x_2}{2}$$

$$\tilde{X} = \frac{32 + 39}{2}$$

$$\tilde{X} = \frac{71}{2}$$

$$\tilde{X} = 35.5$$

Hence, the median age of the students is 35.5.

The Mode

The **mode** is the measure or value which occurs most frequently in a set of data. It is the value with the greatest frequency. It is symbolized as (\hat{X}) (read as “X-hat”).

To find the mode for a set of data:

1. select the measure that appears most often in the set;
2. if two or more measures appear the same number of times, then each of these values is a mode; and
3. if every measure appears the same number of times, then the set of data has no mode.

Example 1.

Find the mode in the given sets of scores.

- a. { 5, 3, 6, 4, 7, 5, 8, 9, 5 }
- b. { 23, 21, 16, 22, 19, 24 }
- c. { 18, 20, 16, 18, 15, 19, 17, 20 }

Solution:

- a. { 5, 3, 6, 4, 7, 5, 8, 9, 5 }

⑤ 3 6 4 7 ⑤ 8 9 ⑤

Since 5 is the most repeated number in the set of data, then **5** is the mode.

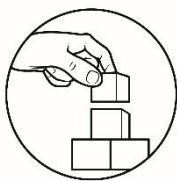
- b. { 23, 21, 16, 22, 19, 24 }

Since every number appears the same number of times, then the set has no mode.

- c. { 18, 20, 16, 18, 15, 19, 17, 20 }

⑱ ⑳ 16 ⑱ 15 19 17 ⑳

Since 18 and 20 appears the same number of times, then 18 and 20 are the modes of the given set of data. The data set is bimodal.



What's More

1. Find the mean, median and mode/modes of each of the following sets of data.

- a. 35, 54, 58, 61, 97
- b. 40, 38, 29, 34, 37, 22, 15, 38
- c. 26, 32, 12, 18, 11, 18, 21, 12, 27
- d. 3, 3, 4, 7, 5, 7, 6, 7, 8, 8, 8, 9, 8, 10, 12, 9, 15, 15

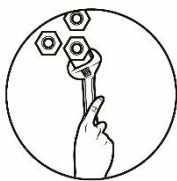


What I Have Learned

To sum it up, read each statements carefully and identify which word/words is being described. Choose your answer from the box hat best below. Write your answer on a separate answer sheet.

Median	Measures of Central Tendency	Mode	Mean
--------	------------------------------	------	------

- _____ 1. I am the most commonly used measure of central tendency.
- _____ 2. I appear the most number of times in a given set.
- _____ 3. I am typical and I am in three forms.
- _____ 4. I am also referred to as an average.
- _____ 5. I am the middle value in a set of data arranged in numerical (ascending or decreasing) order.



What I Can Do

Here is another activity that lets you apply what you learned about the measures of central tendency by doing the following activities.

Solve the following problem.

1. Charlie got the following scores during their fourth quarter summative quizzes: 23, 26, 19, 25, 16, 23 and 21. What is the mean, median and mode of the given scores?
2. A slipper store was able to sell 15 pairs of slippers in one day with sizes, 6, 7, 7, 6, 5, 5, 6, 4, 4, 5, 6, 7, 8, 9, and 6. Which slipper size is saleable? How many of this size were sold for the day?
3. Suppose your grades on three Science exams are 80, 93, and 91. What grade do you need on your next exam to have an average of 90 on the four exams?

Great work! You did a good job in applying what you have learned!

Lesson 2

Measures of Central Tendency of Grouped Data

Congratulations on making this far! This module will provide you with exciting activities on Measures of Central Tendency of grouped data. Good luck!

After using this module, you are expected to:

1. illustrate the measures of central tendency (mean, median and mode) of grouped data; and
2. calculate the measures of central tendency of grouped data.



What's In

Micah's Math test scores were 79, 51, 83, 76, 99, 75, 73, 84 and 77. What is Micah's average test scores? If her teacher drops the lowest score, what will Micah's average be?



What's New

The ages of 20 guests at a party are 22, 23, 24, 32, 27, 28, 29, 27, 7, 20, 22, 81, 33, 27, 26, 24, 19, 20, 21, and 33. What is the average age of guests in the party?



What is It

Grouped Data

The data in a real-world situation can be overwhelming. However, by appropriately organizing data, it is often possible to make a rather complicated set of data easier to understand.

Although the basic ideas of grouping use common sense, there are associated terminologies. To understand the terms, we consider the following:

Frequency Distribution Table

The number of pieces of data that fall into a particular class is called the frequency of that class. For example, as shown in Table 1, the frequency of the class 31-35 is seven. A table listing all classes and their frequencies is called a frequency distribution.

Examples: Table 1. Scores of Grade 7-Narnia Students in the 4th Periodical Test in Mathematics.

Table 1

46-50	2
41-45	2
36-40	5
31-35	7
26-30	4

Mean for the Grouped Data

When the number of items in a set of data is too big, items are grouped for convenience. To find the mean of grouped data using class marks, the following formula can be used:

$$\text{Mean} = \frac{\Sigma(fX)}{\Sigma f}$$

where: f is the frequency of each class

X is the class mark of each class

The **class mar** (or **class midpoint**) is the mid-value of a class interval.

Example 1.

Calculate the mean of the 4th Periodical Test Scores of Grade 7-Narnia Students in Mathematics.

4th Periodical Test Scores of Grade 7-Narnia Students in Mathematics

Score	Frequency
46-50	2
41-45	2
36-40	5
31-35	7
26-30	4

Solution:

Score	Frequency (f)	Class Mark (X)	fX
46-50	2	48	96
41-45	2	43	86
36-40	5	37	185
31-35	7	33	231
26-30	4	28	112
$i = 5$	$\Sigma f = 20$		$\Sigma fX = 710$

$$\text{Mean} = \frac{\Sigma(fX)}{\Sigma f} = \frac{710}{20} = 35.5$$

Therefore, the mean of the 4th periodical test is 35.5.

Median for Grouped Data

The median is the middle value in a set of quantities. It separates an ordered set of data into two equal parts. Half of the quantities is located above the median and the other half is found below it, whenever the quantities are arranged according to magnitude (from highest to lowest).

In computing for the median of grouped data, the following formula is used:

$$\text{Median} = lb_{mc} + \left[\frac{\frac{\Sigma f}{2} - <cf}{f_{mc}} \right] i$$

where: lb_{mc} is the lower boundary of the median class;

f is the frequency of each class;

$<cf$ is the cumulative frequency of the lower class next to the median class;

i is the class interval.

The median class is the class with the smallest cumulative frequency greater than or equal to $\frac{\Sigma f}{2}$. The computed median must be within the median class.

Example 2.

Calculate the median of Grade 7-Narnia Students in the 4th Periodical Test in Mathematics.

4th Periodical Test Scores of Grade 7-Narnia Students in Mathematics

Score	Frequency
46-50	2
41-45	2
36-40	5
31-35	7
26-30	4

Solution:

Score	Frequency (<i>f</i>)	Lower Class Boundary (<i>lb</i>)	Less than Cumulative Frequency (<i>< cf</i>)
46-50	2	45.5	20
41-45	2	40.5	18
36-40	5	35.5	16
31-35	7	30.5	11
26-30	4	25.5	4
<i>i</i> = 5	$\Sigma f = 20$		

Median Class

$$\text{Median} = lb_{mc} + \left[\frac{\frac{\Sigma f}{2} - <cf}{f_{mc}} \right] i$$

a. $\frac{\Sigma f}{2} = \frac{20}{2} = 10$

The 10th score is contained in the class 31-35. This means that the median falls within the class boundaries of 31-35. That is, 30.5-35.5

b. $< cf = 4$

c. $f_{mc} = 7$

d. $lb = 30.5$

e. $i = 5$

$$\begin{aligned}
 \text{Median} &= lb_{mc} + \left[\frac{\frac{\Sigma f}{2} - <cf}{f_{mc}} \right] i \\
 &= 30.5 + \left[\frac{\frac{20}{2} - 4}{7} \right] 5 \\
 &= 30.5 + \left[\frac{10 - 4}{7} \right] 5 \\
 &= 30.5 + \left[\frac{6}{7} \right] 5 \\
 &= 30.5 + \left[\frac{30}{7} \right] \\
 &= 30.5 + 4.29 \\
 &= 34.79
 \end{aligned}$$

Therefore, the median of the 4th Periodical Test is 34.79

(Note: The median 34.79 falls within the class boundaries of 30.5-35.5

Mode for the Grouped Data

The mode for the grouped data can be approximated using the following formula:

$$\text{Mode} = lb_{mo} + \left[\frac{D_1}{D_1 + D_2} \right] i$$

where: lb_{mo} is the lower boundary of the modal class;

D_1 is the difference between the frequencies of the modal class and the next lower class;

D_2 is the difference between the frequencies of the modal class and the next upper class; and

i is the class interval

The modal class is the class with the highest frequency.

Example 3.

Calculate the mode of the 4th periodical test scores of Grade 7-Narnia students in Mathematics.

Score	Frequency
46-50	2
41-45	2
36-40	5
31-35	7
26-30	4

Solution:

Score	Frequency (f)	Lower Class Boundary (lb)
46-50	2	45.5
41-45	2	40.5
36-40	5	35.5
31-35	7	30.5
26-30	4	25.5

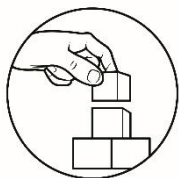
Modal Class

Since class 31-35 has the highest frequency, therefore the modal class is 31-35.

$$\begin{aligned} lb_{mo} &= 30.5 \\ D_1 &= 7 - 4 = 3 \\ D_2 &= 7 - 5 = 2 \\ i &= 5 \end{aligned}$$

$$\begin{aligned} \text{Mode} &= lb_{mo} + \left[\frac{D_1}{D_1 + D_2} \right] i \\ &= 30.5 + \left[\frac{3}{3+2} \right] 5 \\ &= 30.5 + \left[\frac{3}{5} \right] 5 \\ &= 30.5 + \left[\frac{15}{5} \right] \\ &= 30.5 + 3 \\ &= 33.5 \end{aligned}$$

Therefore, the mode of the 4th periodical test scores is 33.5.



What's More

A. Find the mean, median, and mode of the following data set.

Scores of Grade 7 Students in 30-point Math Quiz

Scores	f
28-29	1
26-27	3
24-25	3
22-23	3
20-21	6
18-19	6
16-17	8
14-15	6
12-13	10
10-11	14

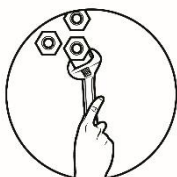


What I Have Learned

To sum it up, let us complete the statements. Choose your answer from the box that best completes each of the statement below.

mean	median	mode	cumulative frequency
modal class	median class	frequency	lower class boundary

1. The total frequencies in a frequency distribution table is called _____.
2. The _____ interval is the corresponding class where the median value falls.
3. _____ is the middle value in a set of quantities.
4. The _____ is the value that occurs the most often in a data set.
5. The _____ of a given class is obtained by averaging the upper limit of the previous class and the lower limit of the given class
6. _____ is the number of occurrences of a repeating event per unit of time.
7. The _____ is the other term used for average.
8. The _____ is the interval with the highest frequency.



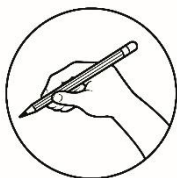
What I Can Do

Calculate the mean, median and mode of the given grouped data.

Pledges for the Survivors of Typhoon Yolly.

Pledges in Pesos	Frequency
9,000 – 9,999	4
8,000 – 8,999	12
7,000 – 7,999	13
6,000 – 6,999	15
5,000 – 5,999	19
4,000 – 4,999	30
3,000 – 3,999	21
2,000 – 2,999	41
1,000 – 1,999	31
0 - 999	14

Great work! You did a good job in applying what you have learned!



Assessment

Multiple Choice. Choose the letter of the correct answer. Write the chosen letter on a separate sheet of paper.

1. Raymund is hosting a kiddie party in his house. Seven kids aged 11 and 8 babies aged 1 – 3 attended the party. Which measure of central tendency is appropriate to use to find the average age?
a. Mean b. Mode c. Median d. Range
2. For the set of data consisting of 12, 12, 13, 14, 14, which statement is true?
a. mean = mode b. mean = median
c. median = mode d. mean < median
3. What is the median of the sample 5, 5, 11, 9, 8, 5, 8?
a. 5 b. 6 c. 8 d. 9
4. What is the mean of 73, 63, 71, 69, 70 and 68?
a. 18 b. 47 c. 69 d. 98

For numbers 5 - 9, refer to the following data set.

A = {43, 11, 94, 46, 43, 74}

B = {4, 2, 9, 7, 5, 9, 3}

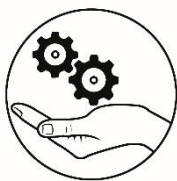
5. Find the mean value of set A.
a. 44.50 b. 46 c. 51.83 d. 74
6. What is the median of the values in set A?
a. 43 b. 44.50 c. 46.50 d. 60
7. What is the mode of set A data?
a. 11 b. 43 c. 46 d. 94
8. What is the median of the values in set B?
a. 4 b. 5 c. 6 d. 7
9. What is the mode of set B data?
a. 3 b. 4 c. 5 d. 9
10. Ermie got the following scores in the fourth quarter quizzes: 12, 10, 16, x, 13, and 9. What must be her score on the 4th quiz to get an average of 12?
a. 12 b. 13 c. 15 d. 16

For numbers 11 – 15, refer to the following frequency distribution table.

The ages of 112 people in an island are grouped as follows:

X	f
0 – 9	20
10 – 19	21
20 – 29	23
30 – 39	16
40 – 49	11
50 – 59	10
60 – 69	7
70 – 79	3
80 – 89	1

11. What is the class size of the given data?
 a. 7 b. 8 c. 9 d. 10
12. What is the modal class?
 a. 0 - 9 b. 10 - 19 c. 20 - 29 d. 40 - 49
13. What is the value of the median class?
 a. 10 - 19 b. 20 - 29 c. 30 - 39 d. 46.5
14. What is the ΣfX ?
 a. 85 b. 112 c. 3304 d. 9520
15. What is the mean of the data?
 a. 24.5 b. 29.50 c. 34.5 d. 40

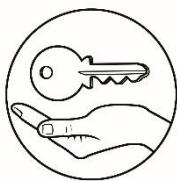


Additional Activities

The data below show the score of 30 students in the 2019 division Math Olympics – Grade 7 individual quiz.

16	38	22	15	38
15	32	20	24	22
17	18	18	23	39
21	33	35	16	14
43	22	25	22	20
28	25	18	17	22

- What score is typical to the group of the students?
- What score appears to be the median? How many students fall below that score?
- Which score frequently appears?
- Find the Mean, Median and Mode.



Answer Key

<p>Lesson 2</p> <p>What's In</p> <p>77.44 and 80.75</p> <p>What's New</p> <p>27</p> <p>What's More</p> <p>Mean = 16.23</p> <p>Median = 15.5</p> <p>Mode = 11.06</p>	<p>Lesson 2</p> <p>What I have learned</p> <ol style="list-style-type: none"> 1. cumulative frequency 2. median class 3. median 4. mode 5. lower class boundary 6. frequency 7. mean 8. modal class 	<p>Lesson 2</p> <p>What I Can Do</p> <p>Mean = 41,019.5</p> <p>Median = 3,665.5</p> <p>Mode = 2,332.83</p>	<p>Additional Activities</p> <ol style="list-style-type: none"> 23.93 22 and 12 22 Mean = 23.93 Median = 22 Mode = 22 <p>Assessment</p> <ol style="list-style-type: none"> 1. B 2. B 3. C 4. C 5. C 6. C 7. B 8. B 9. D 10. A 11. D 12. C 13. B 14. C 15. B
<p>Lesson 1</p> <p>What's In</p> <ol style="list-style-type: none"> Aelyn 5 Jixzier 8 Royce 7 Jixzier Arlo Arlo 4 Aevryn 5 Royce Arlo Jixzier Arlo Aevryn I I g. 	<p>Lesson 1</p> <p>What I Have Learned</p> <ol style="list-style-type: none"> 1. Mean 2. Mode 3. Measures of central tendency 4. Mean 5. Median <p>Lesson 1</p> <p>What's New</p> <ol style="list-style-type: none"> 1. Add all the scores divided by the total number of set in a data. 2. Middle Value when arranged in ascending or descending order 3. The most appeared data 	<p>Lesson 1</p> <p>What's More</p> <ol style="list-style-type: none"> Mean = 61 Median = 58 Mode = no mode Mean = 31.63 Median = 35.5 Mode = 38 Mean = 19.67 Median = 18 Mode = 12 and 18 Mean = 8 Median = 8 Mode = 8 	<p>Lesson 1</p> <p>What I Can Do</p> <ol style="list-style-type: none"> 1. Mean = 21.86 Median = 23 Mode = 23 Size 6 is the saleable size There are 15 shoes sold for the day. 3. 96

References

E-Math – Grade 7 Learner's Material Revised Edition, 2015, ISBN: 978-971-23-6941-4, pp 598 - 613

Mathematics Learner's Module for Grade 8, 2015, ISBN: 971-07-2168-2, pp 485 - 539, JTW Corporation

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