Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION
Misamis Street, Bago-Bantay, Quezon City

UNIFIED SUPPLEMENTARY LEARNING MATERIALS
(USLeM)

MATHEMATICS

Quarter 4 Week 5

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UNIFIED SUPPLEMENTARY LEARNING MATERIALS
Grade 6 MATHEMATICS

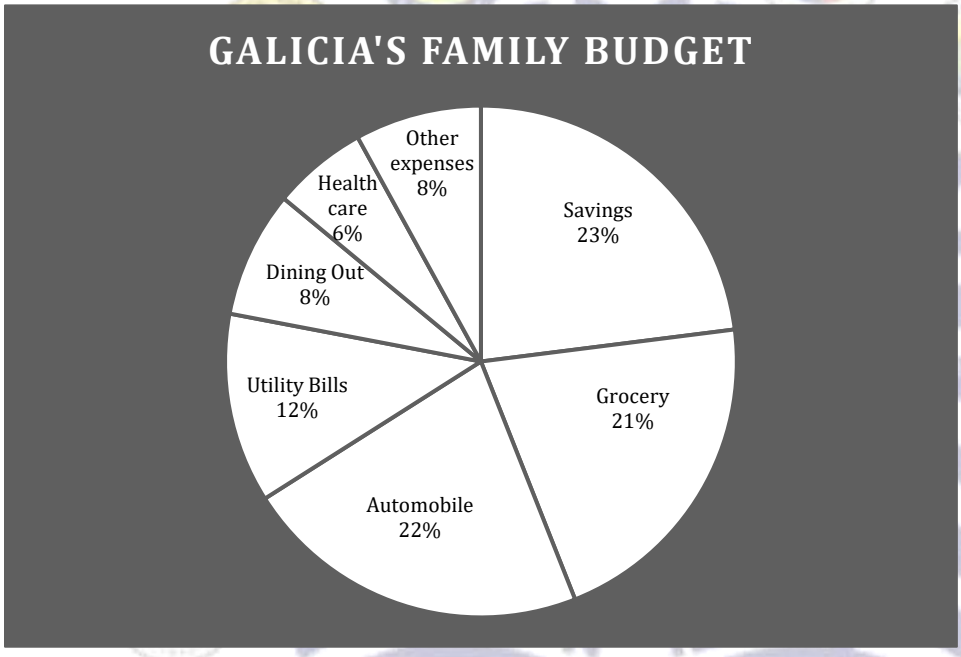
LESSON 1: SOLVING ROUTINE AND NON-ROUTINE PROBLEMS USING DATA PRESENTED IN A PIE GRAPH. (M6SP-IVf-4.6)

EXPECTATIONS

Specifically, this module will help you to solve routine and non-routine problems using data presented in a pie graph.

PRE-TEST

DIRECTIONS: Read the following problems carefully. Choose the letter that corresponds to the best answer.



The Galicia family earns ₱60,000.00 a month. How much did the family save in one month?

1. What is asked in the problem?
   A. The amount spent for food.
   B. The amount saved in one month.
   C. The amount allotted for grocery.
   D. The amount given to each member.

2. How much did the family save in one month?
   A. ₱12,800 B. ₱13,800 C. ₱14,800 D. ₱15,800

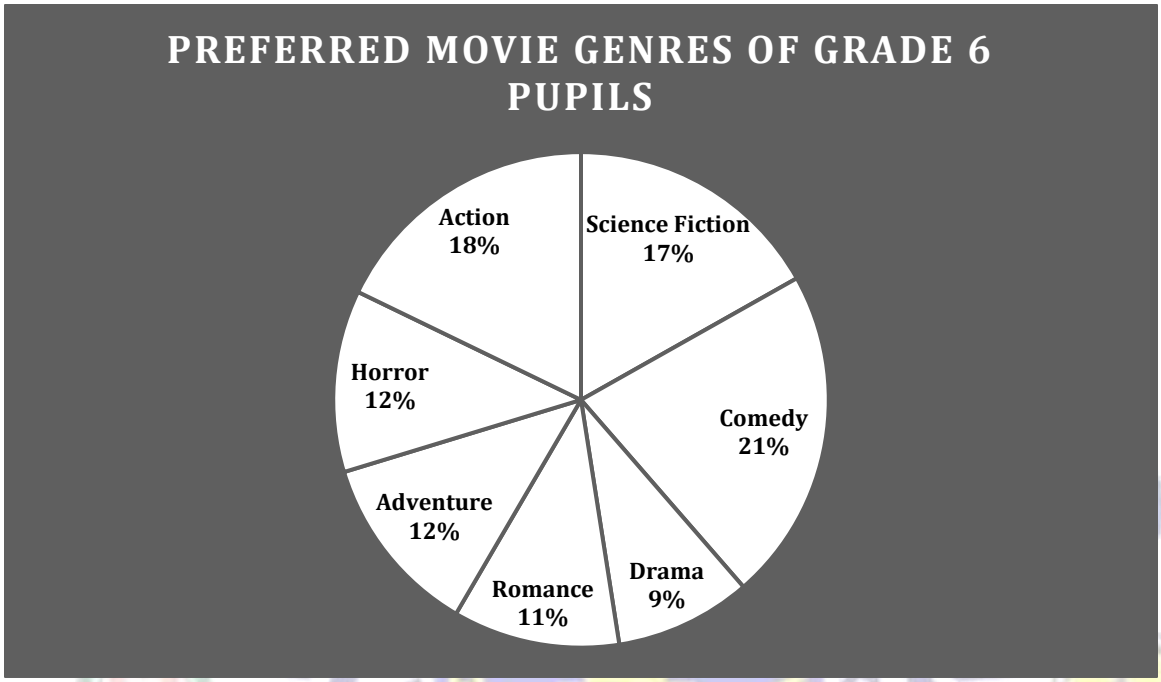
3. How much is spent for health care and other expenses?
   A. ₱6,400 B. ₱7,400 C. ₱8,400 D. ₱9,400

4. If dining out would not be part of the family's expenses next month and instead will be added to the budget for grocery, how much is their budget for grocery next month?
   A. ₱14,400 B. ₱15,400 C. ₱16,400 D. ₱17,400

5. If Mr. Galicia's family spent only 70% of the amount allotted for automobile and decided to put it into savings, how much is the new amount allotted for savings?
   A. ₱17, 760 B. ₱17, 780 C. ₱17, 860 D. ₱17, 880

LOOKING BACK

DIRECTIONS: Study the pie graph and answer the questions below.



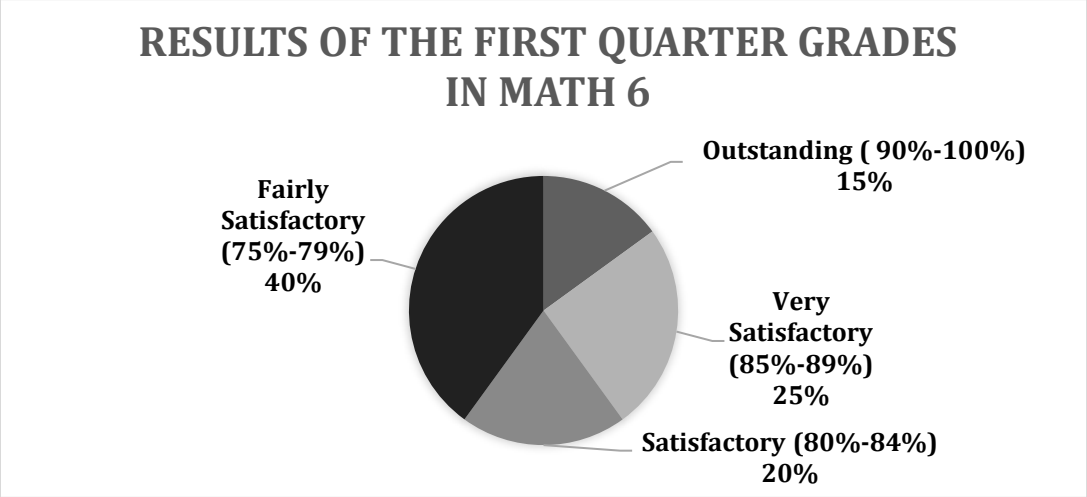
1. What is the title of the graph? _____
2. What kind of movie is the most favorite of Grade Six learners? _____
3. What kind of movie is the least favorite? _____
4. What kind of movies have the same number of percentages? _____
5. What percent of the population chose romance? _____

BRIEF INTRODUCTION

Consider the situation below.
The Four-step method by Polya are the steps we follow in solving word problems in Mathematics.

1. **Understand**
   a. What is asked?
   b. What are given?
   c. What is the hidden question?
2. **Plan**
   a. What operation/s will be used?
   b. What is the equation/ number sentence?

3. **Solve**
   a. What is the final answer?
4. **Check**



1. If there are 400 Grade 6 students at Villamor Airbase Elementary School, how many learners got an Outstanding grade?

- What is asked in the problem?
  The number of learners who got an Outstanding grade.
- What are given?
  400 Grade 6 students; 15%
- What operation will be used?
  Multiplication
- What is the number sentence?
  400 x 15% = N
- What is the answer?
  Solution: Remember to change first percent to decimal before multiplying
  Thus, 15% will become 0.15
  400 x 0.15 = 60
  Therefore, there are 60 learners who got Outstanding grades.

2. How many learners got Very Satisfactory grade?

- What is asked?
  The number of learners who got Very Satisfactory grade.
- What are given?
  400 Grade 6 students; 25%
- What operation will be used?
  Multiplication
- What is the number sentence?
  400 x 25% =N
- What is the answer?
  Remember to change first percent to decimal before multiplying
  Thus, 25% will become 0.25
  400 x 0.25 = 100 learners
  Therefore, there are 100 learners who got Very Satisfactory grade.

3. What is the difference between the learners who got Fairly Satisfactory and Very Satisfactory grades?
   - What is asked?
     The difference between the learners who got Fairly Satisfactory and Very Satisfactory grades.
   - What are given?
     400 Grade 6 students; 40% for Fairly Satisfactory
     400 Grade 6 students; 25% for Very Satisfactory
   - What is the hidden question?
     The number of learners who got Fairly Satisfactory and Very Satisfactory grades.
   - What operations will be used?
     Multiplication and Subtraction
   - What is the number sentence?
     (400 x 40%) - (400 x 25%) = N
   - What is the answer?
     Solution: (400 x 40%) - (400 x 25%)
     (400 x 0.40) - (400 x 0.25)
     160 - 100 = 60
     Therefore, the difference between the number of learners who got Fairly Satisfactory and Very Satisfactory is 60.

4. How many more learners performed Fairly Satisfactorily than those who are Outstanding and performed Satisfactorily?
   - What is asked?
     The number of learners performed fairly satisfactorily than learners performed outstanding and satisfactorily.
   - What are given?
     400 Grade 6 students; 40% for Fairly Satisfactory
     400 Grade 6 students; 15% for Outstanding
     400 Grade 6 students; 20% for Satisfactory
   - What is the hidden question?
     The number of learners who belong to Fairly Satisfactory, Outstanding and Fairly Satisfactory.
   - What operations will be used?
     Multiplication, Addition and Subtraction
   - What is the number sentence?
     (400 x 40%) - $[(400 \times 15\%) + (400 \times 20\%)]$ = N
   - What is the answer?
     Solution: (400 x 40%) - $[(400 \times 15\%) + (400 \times 20\%)]$
     (400 x 0.40) - $[(400 \times 0.15) + (400 \times 0.20)]$
     160 - [60 + 80]
     160 - 140 = 20
     Therefore, the answer is 20 learners.

5. Supposed that in the next rating period, 15% of the learners who performed Fairly Satisfactory will get an average of 80-84%. How many learners will there be in the Satisfactory grade?
   - What is asked?
     The number of learners there will be in the Satisfactory grade.
   - What are given?

400 Grade 6 students; 40% and 15% for Fairly Satisfactory
400 Grade 6 students; 20% for Satisfactory

- What is the hidden question?
  The new number of learners who belong to Fairly Satisfactory.
- What operations will be used?
  Multiplication and Addition
- What is the number sentence?
  $[(400 \times 40\%)(15\%)] + (400 \times 20\%) = N$
- What is the answer?
  Solution: $[(400 \times 40\%)(15\%)] + (400 \times 20\%)$
  $[(400 \times 0.40)(0.15)] + (400 \times 0.20)$
  $[(160)(0.15)] + 80$
  $24 + 80 = 104$

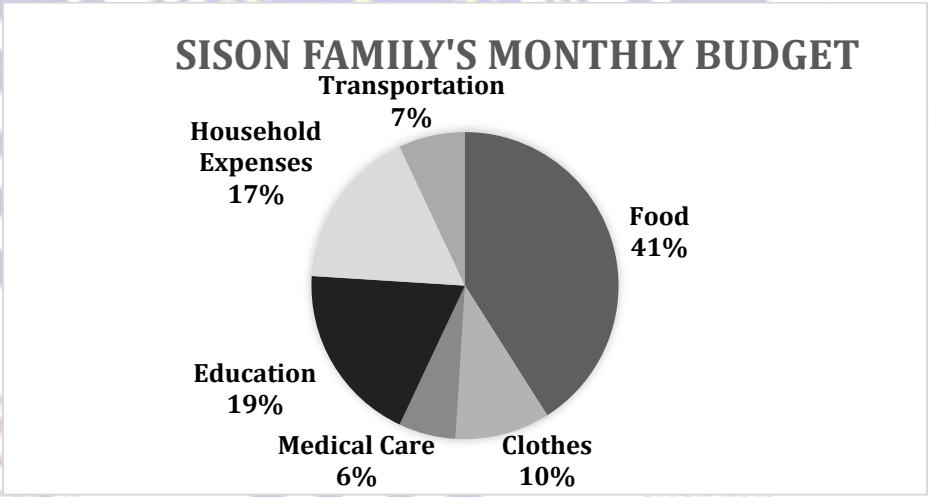
Therefore, the answer is 104 learners.

If you were to choose, in which group would you like to belong? _____
Why? _____
What will you do to have good grades? _____

ACTIVITIES

ACTIVITY 1: PRACTICE

DIRECTIONS: Study the pie graph and answer the questions.



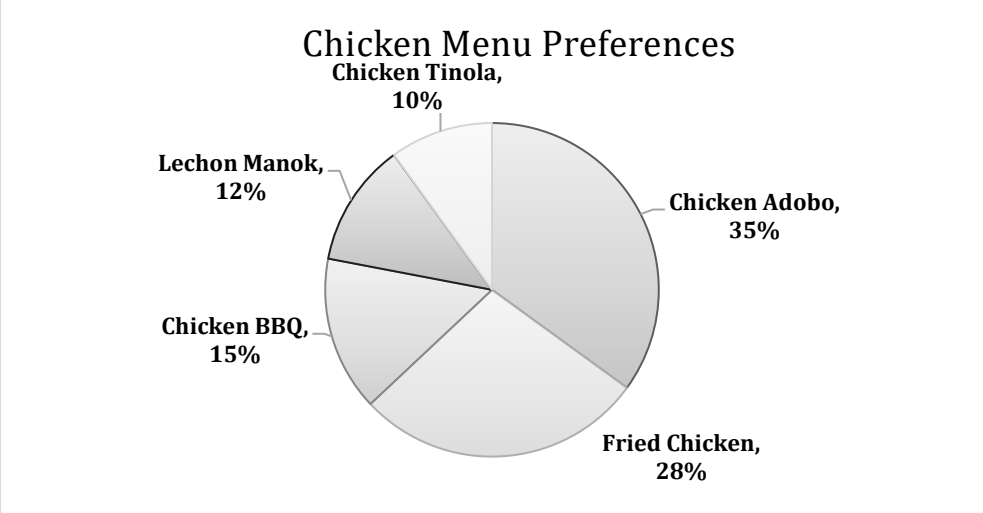
If the family's monthly income is ₱50, 000 .00, how much is spent for food?

1. What is asked in the problem? _____
2. What are given to solve the problem? _____
3. What is the answer? _____
4. How much is spent for Education? _____
5. Due to the pandemic, the Sison's family budget allotted for transportation was set aside and it was being added to medical care. How much now is the allotted budget for medical care? _____

ACTIVTY 2: KEEP PRACTICING

DIRECTIONS: Consider this situation.

A poll was taken online to collect data on chicken menu preferences of students. Each student voted only once. The result of this poll is displayed in the pie chart below.



If there are 200 learners being surveyed, how many of them prefer Chicken Adobo?

1. What is being asked in the problem?

   _____

2. What is the answer?

   _____

3. What is the difference between the number of learners who prefer Chicken Adobo than Fried Chicken?

   _____

4. How much bigger is the number of learners who prefer Fried Chicken and Lechon Manok than those who prefer Chicken Tinola and Chicken BBQ?

   _____

5. If 20% of students who prefer Chicken Adobo switch to Lechon Manok, how many students now prefer Lechon Manok?

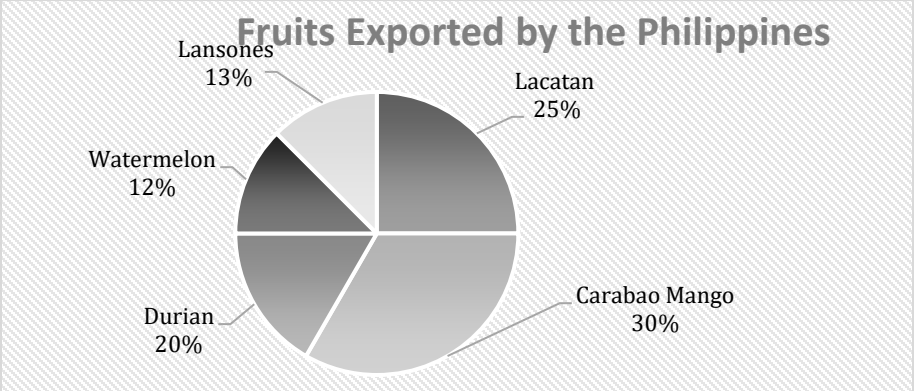
   _____

REMEMBER

- Pie graph or circle graph is a type of graph used to represent a part to whole relationship.
- A pie graph shows the comparison between the complete set of information and any of the parts of that information.
- Each pie graph is equal to 1 whole or 100%.
- When solving problems always remember the Four-step method by Polya
  - Understand
  - Plan
  - Solve &
  - Check

CHECKING YOUR UNDERSTANDING

DIRECTIONS: Study the pie graph and answer the questions.

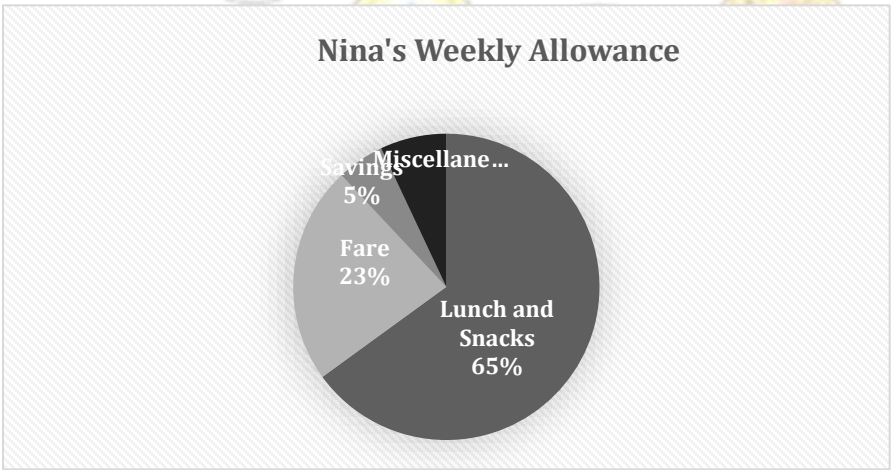


Supposed that the total crates of fruits exported by the Philippines are 3,000, how many of each kind of fruits is exported?

1. What is asked in the problem?
   _____
2. What are given to solve the problem?
   _____
3. Based on the fruits listed, what is the most in demand fruit in other countries? _____ How many crates of it was exported? _____
4. How much more is the combined number of crates of Lacatan Banana and Carabao Mango than Watermelon and Durian?
   _____
5. If 80% crates of the carabao mango being exported came from Luzon and Visayas, how may crates of carabao mango are coming from Mindanao?
   _____

POST-TEST

DIRECTIONS: Read each question carefully. Choose the letter that corresponds to the correct answer.



Nina's weekly budget is ₱1,000. 00. How much money is allotted for her lunch and snacks?

1. What is asked in the problem?
   A. The amount of money given to Nina.
   B. The amount of money shared to her friends.
   C. The amount of money allotted to her lunch and snacks.
   D. The amount of money given to her and divided equally.

2. What facts are needed if you want to solve the amount of money allotted for lunch and snacks?
   A. ₱1,000.00 and 65%
   B. ₱1,000.00 and 23%
   C. ₱1,000.00 and 7%
   D. ₱1,000.00 and 5%

3. What is the answer to the problem?
   A. ₱650 B. ₱700 C. ₱750 D. ₱800

4. Considering that this budget is on weekly basis, how much will she save in one month?
   A. ₱50 B. ₱100 C. ₱150 D. ₱200

5. If only 95% of the allotted budget for lunch and snacks is used and the remaining amount is added to miscellaneous, how much is the new amount allotted to miscellaneous?
   A. ₱101.50 B. ₱102.50 C. ₱103.50 D. ₱104.50

KEY TO CORRECTION

PRE-TEST

1. B
2. B
3. C
4. D
5. A

LOOKING BACK

1. Preferred Movie Genre of Grade 6 Pupils
2. Comedy
3. Drama
4. Horror & Adventure
5. 11%

ACTIVITY 1

1. The amount spent for food.
2. ₱50,000 ; 41 %
3. ₱20,500
4. ₱9,500
5. ₱6,500

ACTIVITY 2

1. The number of pupils who preferred chicken adobo.
2. 70
3. 14
4. 30
5. 38

CHECKING YOUR UNDERSTANDING

1. The number of each kind of fruits exported.
2. 3,000 crates; 30%; 25%; 13%; 12%; & 20%
3. Carabao mango; 900 crates
4. 690
5. 180

POST TEST

1. C 2. A 3. A 4. D 5. B

REFERENCES:

Making Connections in Mathematics 6 pp362-364
Math Hour Skill book 6 pp310- 314
Lesson Guides in Elementary Mathematics 6 pp571-584
Realistic Math 6 pp362-369