Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION
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UNIFIED SUPPLEMENTARY LEARNING MATERIALS
(USLeM)

MATHEMATICS 5
Quarter 4 Week 7

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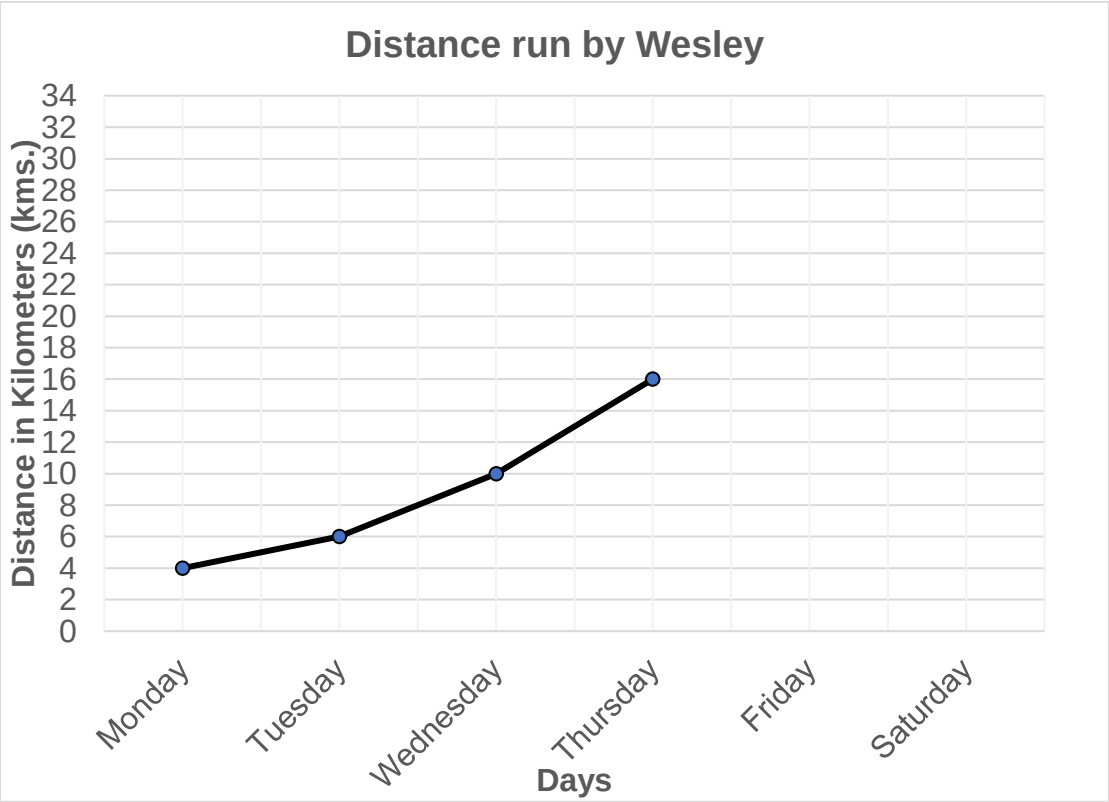
Expectations

After going through this module, you are expected to 1.) solve routine and non – routine problems using data presented in a line graph; and 2.) draw inferences based on data presented in a line graph.

Pretest

Directions: Read and understand the problem. Answer the questions that follow.

Wesley ran 4 kilometers on Monday, 6 kilometers on Tuesday, 10 kilometers on Wednesday, and 16 kilometers on Thursday. If this pattern continues, how many kilometers will Wesley run on Saturday?

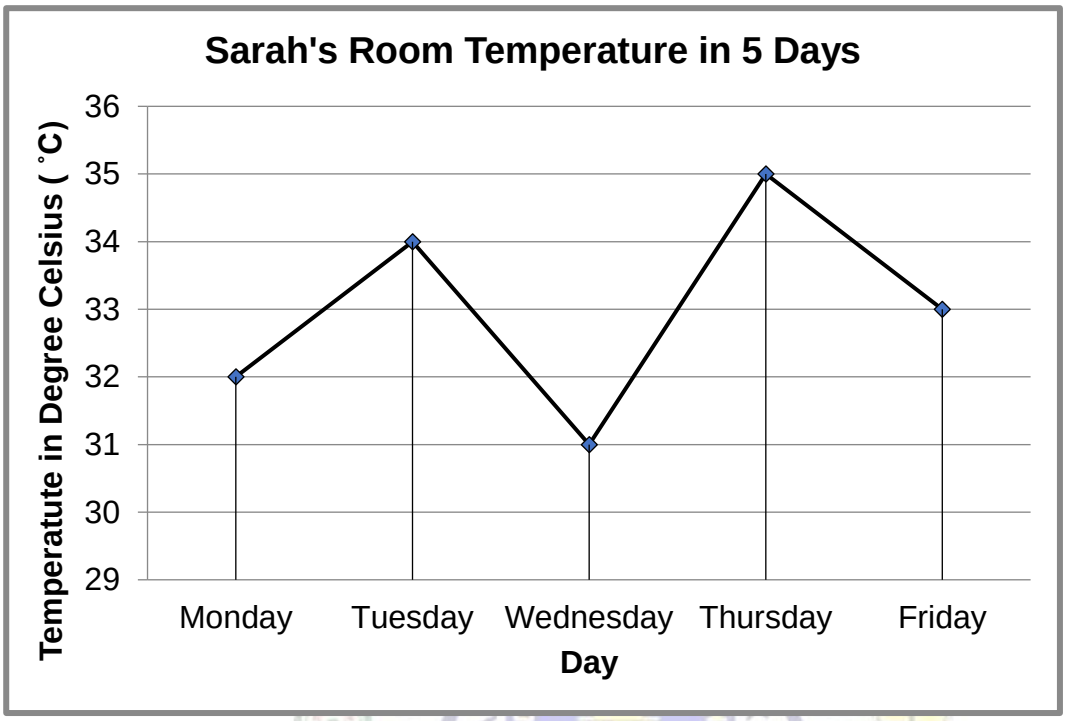


1. What is asked in the problem?
   _____
2. What are the given?
   _____
3. What strategy will you use to solve the problem?
   _____
4. Write your solution and complete the graph.

   _____
5. Based on your answer in number 4, what conclusion can you draw?
   _____

Looking Back

The graph below shows Sarah's room temperature in degree Celsius (˚C). Study it to answer the questions that follow.



1. What does the line graph tell us? _____
2. What two quantities are being considered in the line graph?
   _____
3. When did the highest temperature occur?
   A. Monday B. Tuesday C. Wednesday D. Thursday
4. What is the difference between the highest and lowest temperatures?
   A. 1 ˚C B. 2 ˚C C. 3 ˚C D. 4 ˚C
5. Find the average temperature in 5 days.
   A. 31 ˚C B. 32 ˚C C. 33 ˚C D. 34 ˚C

Brief Introduction

In solving routine and non–routine problems using data presented in a line graph we use the following steps.

Understand the problem.

What is asked? What are the given facts?

Plan to solve the Problem.

What process will be used? What is the mathematical sentence?

Determine the strategies that can be used to solve the problem. You can write an equation, draw a diagram, guess and check, make a list or table, work backwards, look for patterns, etc.

Solve.

Implement the strategy/strategies.

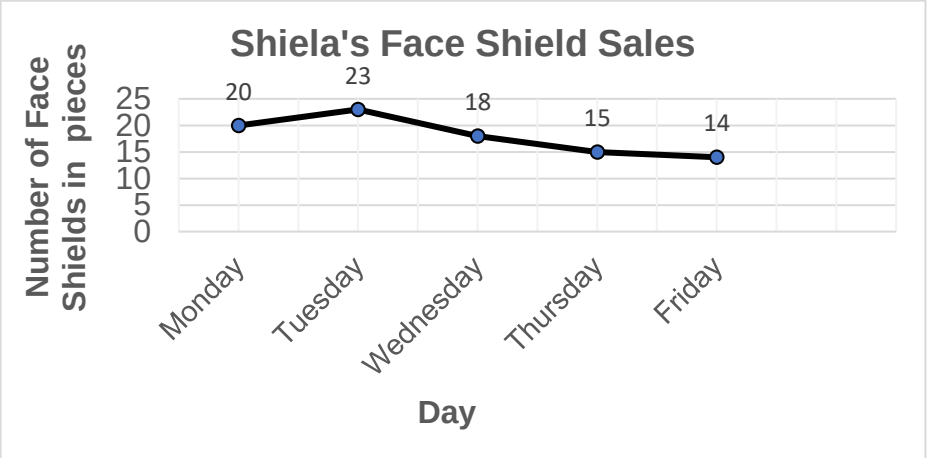
In drawing inferences or conclusion, the following points should be considered:

1. Study the graph carefully by identifying its parts (vertical axis, horizontal axis, title, legend, etc.).
2. Interpret the graph by analyzing if there is an increase or decrease in value being presented.
   Interpretation of data – giving explanation or meaning to the information of the presented data.
3. Draw the appropriate conclusion from the analyzed data.
   Conclusion – is a judgment based on the data or information presented.

Study the examples below:

Example 1

Shiela keeps track of the face shields sold in her store. The graph below shows her daily sales from Monday to Friday. What is the average sales of face shields for five days? What can you infer from the graph?

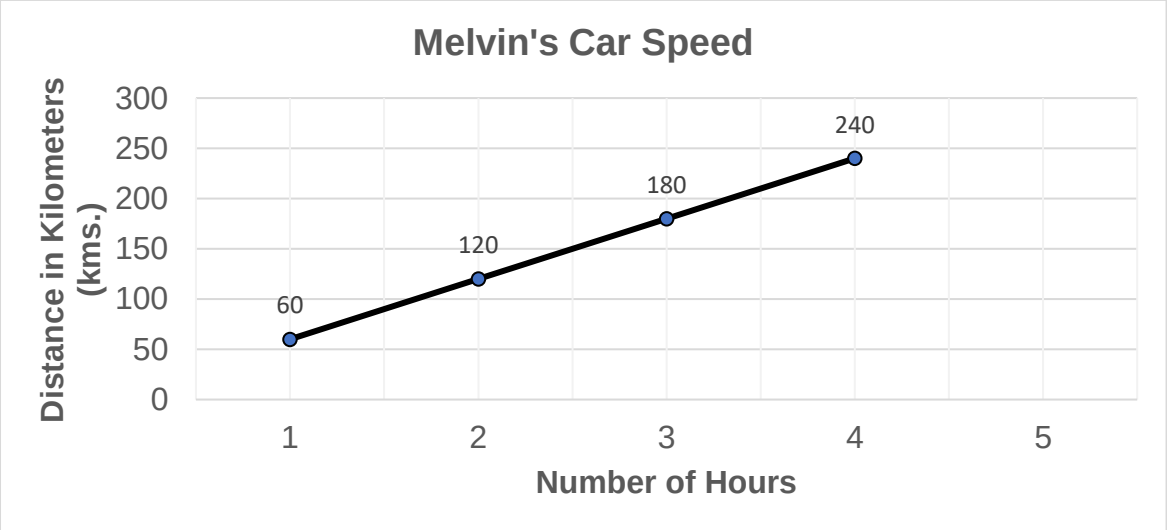


Understand the problem	
What is asked?	The average sales of face shields for five days and inference from the graph.
What are the given facts?	The daily sales of face shields: Monday=20, Tuesday=23, Wednesday=18, Thursday=15, Friday=13
Plan to solve the problem	
What operation/s will be used?	Addition and Division
What is the mathematical sentence?	(20 + 23 + 18 + 15 + 14) ÷ 5 = N Where N is the average sales

Solve	
Perform the strategy.	(20 + 23 + 18 + 15 + 14) ÷ 5 = N 90 ÷ 5 = N 18 = N
Answer	The average sales of face shields for five days is 18 pieces. Based from the graph, there is an increase in sales of face shields from Monday to Tuesday while decrease in the sales from Tuesday to Friday.

Example 2

Melvin drove his car at a speed of 60 km/hr. If he drove it for 5 hours, how far did he travel? Plot it on the graph and extend the segments.



Let us Analyze.

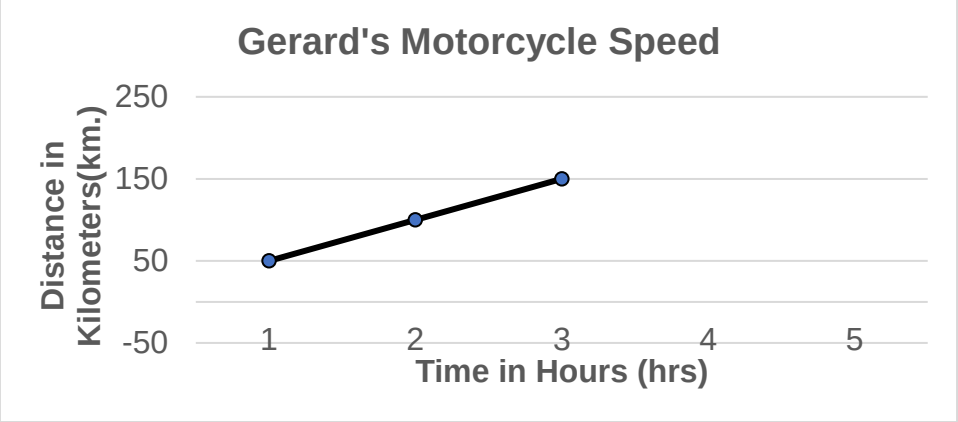
Understand the problem	
What is asked?	Distance travelled by Melvin's car in 5 hours
What are the given facts?	5 hours Average speed of Melvin's car: 60 km/hr Distance travelled for 4 hours based from the graph: 60 km, 120 km, 180 km, 240 km
Plan to solve the problem	
What operation/s will be used?	Multiplication
What is the mathematical sentence?	d = 60 km/hr x 5 hr where d is the distance travelled in 5 hours
Solve	
Perform the strategy.	d = 60 km/hr x 5 hr d = 300 km

Answer	The distance travelled by Melvin's car for 5 hours is 300 km. As the number of hours increases, the distance travelled by the car also increases

Activities

Directions: Read and understand the problem. Answer the questions that follow.

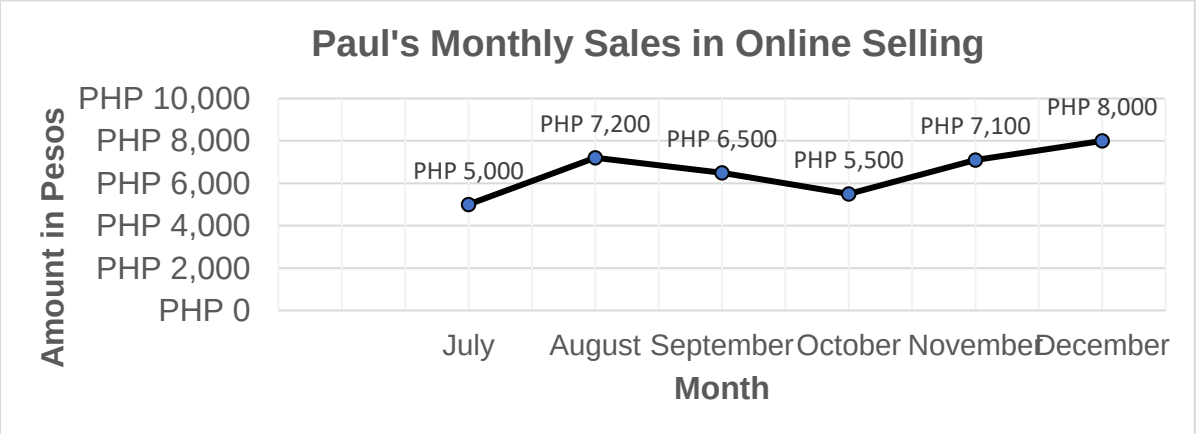
A. Gerard's motorcycle average speed is 50 km/hr. If he drove it for 4 hours, how far did he travel? How about for 5 hours? Plot it on the graph and extend the segments.



1. What is asked? _____
2. What are the given? _____
3. Show your solution and encircle your final answer. (2 points)

4. What inference can you make based from your answer in number 4?
_____
_____

B. Paul lost his job due to the pandemic. He decided to sell online to cover up his monthly expenses. Every month, he keeps track of his sales by recording it. What was the average monthly sales of Paul for six months?



1. What is asked in the problem? _____
2. What are the given facts? _____
3. What operation will be used to solve the problem? _____
4. What was the average monthly sales of Paul for six months? _____
5. What is the best conclusion about the graph?

_____

Remember

In solving routine and non-routine problems using data presented in a line graph we use the following steps.

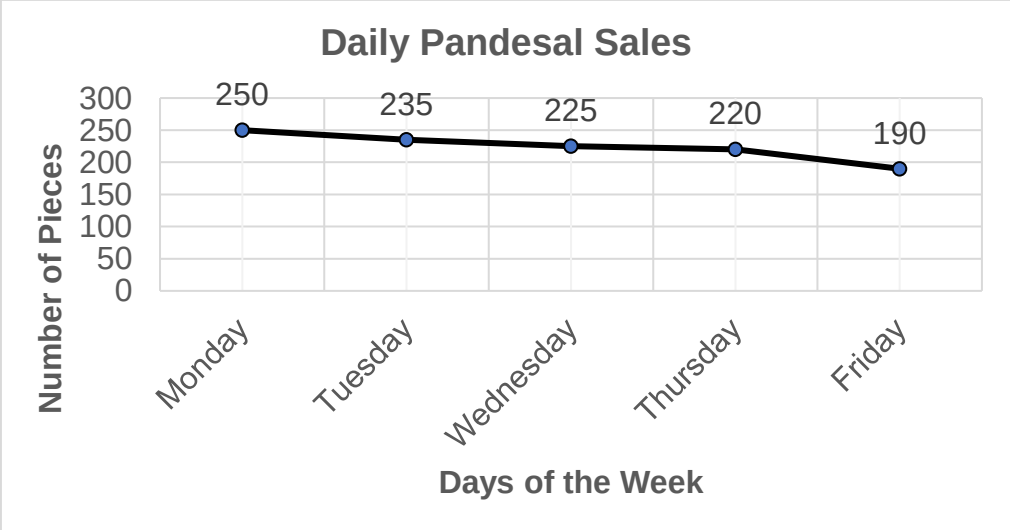
a. Understand the problem
b. Plan to solve the problem
c. Solve

A **line graph** is a kind of graph which shows data or information through series of points connected by line segments. It is used to show changes over short or long period of time.

Make inferences or draw conclusions based on the data given on the line graph.

Checking Your Understanding

The manager of Garcia's Bakery keeps track of how many pieces of *pandesal* are sold each day. What is the average sales of *pandesal* in five days? Use the graph below to answer the following questions.



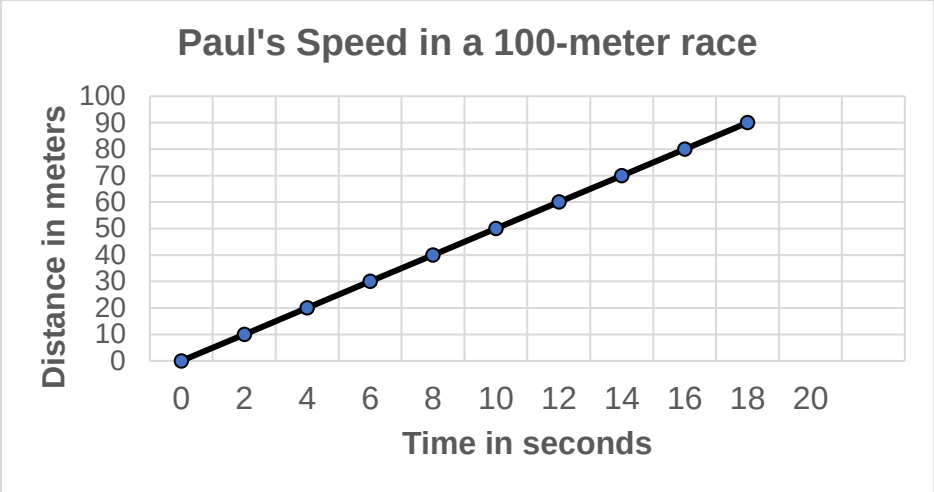
1. What is asked? _____
2. What are the given? _____
3. What operation will be used to solve the problem? _____
4. Solve and encircle your final answer.

5. What is the best conclusion about the graph? _____

Posttest

Directions: Read and understand the problem. Answer the questions that follow.

Paul takes place in a 100-meter race. If Paul's average speed is 5 meters per second, how long did it take Paul to reach the finish line?



1. What is asked? _____
2. What are the given facts? _____
3. What operation will be used to solve the problem? _____
4. Solve and encircle your final answer. Then complete the graph. (2 points)

5. Based on your answer in number 4, what conclusion can you draw from the graph?

Answer Key

PRETEST

1. The distance Wesley will run on Saturday.
2. Monday = 4 km. Tuesday – 6 km. Wednesday – 10 km. Thursday – 16 km.
3. Looking for patterns
4.

Monday	4 km.
Tuesday	6 km.
Wednesday	10 km.
Thursday	16 km.
Friday	24 km.
Saturday	34 km.

5. I can infer that the distance run by Wesley from Monday to Saturday is increasing.

LOOKING BACK

1. Sarah's room temperature in 5 days.
2. The days and temperature in degree Celsius.
3. D. Thursday
4. D. 4 °C
5. C. 33 °C

ACTIVITIES A.

1. The distance travelled by Gerard in 4 hours and 5 hours.
2. 1 hour = 50 km., 2 hrs. = 100 km., 3 hours = 150 km.
3. Add 50 km per hour to get the distance for the succeeding hours

Time	Distance in kilometer
1 hour	50 km.
2 hours	100 km.
3 hours	150 km.
4 hours	200 km.
5 hours	250 km.

4. I can infer that as the number of hours increases, the distance also increases.

B.

1. The average monthly sales of Paul in Online Selling for six months.
2. July – Php 5 000, August – Php 7 200, September – Php 6 500 October – Php 5 500 November – Php 7 100 December – Php 8 000
3. Addition and Division
4. The average monthly sale of Paul in online selling for 6 months is Php 6 550.
5. There was an increase and decrease in Paul's monthly sales in online selling.

CHECKING YOUR UNDERSTANDING

1. The average sales of pan desal in five days.
2. Monday – 250 pieces, Tuesday – 235 pieces, Wednesday – 225 pieces, Thursday – 220 pieces, Friday – 190 pieces
3. Addition and Division
4. (250 + 235 + 225 + 220 + 190)/5 = 224 pieces
5. The daily sales of pan desal decreased.

POST TEST

1. The time it will take Paul to reach the finish line.
2. Average speed of Paul which is 5 meters per second.
3. Add 5 meters per second. Since at 18 seconds, the distance is 90 meters then, 19 seconds = meters and 20 seconds = 100 meters

4. I can infer that Paul finished the 100-meter race at 20 seconds with an average speed of 5 meters per second. As the time increases, the distance also increases.