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MATHEMATICS

Quarter 2-Module 5:
Solving Problems Involving
Linear Functions

AIRs - LM

MATHEMATICS 8
Quarter 2 - Module 5: Solving Problems Involving Linear Functions
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MATHEMATICS

Quarter 2-Module 5:
Solving Problems Involving Linear Functions

DepED

DEPARTMENT OF EDUCATION

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.

Have you ever thought how consumers compute their income over time? How does the family's power consumption affect the amount of the electric bill? How is a dog's weight affected by its food consumption? How is the revenue of the company related to the number of items produced and sold? These are just some real -life situations wherein you can use your knowledge and skills in previous lessons to solve problems involving linear functions.

In this module, you will learn the application of linear functions in everyday situations. As you go over the different problems you will apply your knowledge and skills related to linear functions in solving problems.

In this lesson, you will learn to:
1. Solve problems involving linear functions. **(M8AL-IIe-2)**

At the end of this module, you are expected to:
1. recall the different methods to illustrate linear functions
2. apply the concept of linear functions in solving related problems; and
3. describe the importance of understanding linear functions and its application to real life.

Let us find out how much you already know about this module. Answer the pre-assessment in a separate sheet of paper.

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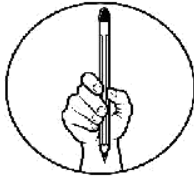
Pre-test

Directions: Choose the letter of the correct answer. Write your answer on a separate sheet of paper. (Take note of the items that you were not able to answer correctly and find the right answer as you go through this module)

1. Alden rents a bicycle in the park. He must pay fixed amount of Php 10 and additional of Php 15 per hour or a fraction of an hour, thereafter. If y refers to the cost and x refers to the number of hours, what is the correct mathematical model of the situation?
   A. y = 15x + 10   B. y = 10x + 15   C. y = 15x – 10   D. y = 10x – 15

2. A survey of out-of-school youth in Barangay Pinagpala was conducted. From year 2008 to 2012, the number of out-of-school youths was tallied and was observed to increase at a constant rate as shown in the table below.

Year	**2008**	**2009**	**2010**	**2011**	**2012**
Number of out-of-school-youth, y	30	37	44	51	58

   If the number of years after 2008 is represented by x, what mathematical model can you make to represent the data above?
   A. y = -7x + 30   B. y = -7x + 23   C. y = 7x + 30   D. y = 7x + 23

3. If the pattern continues, can you predict the number of out-of-school youths by year 2020?
   A. Yes, the number of out-of-school youths by year 2020 is 107.
   B. Yes, the number of out-of-school youths by year 2020 is 114.
   C. No, because it is not stipulated in the program.
   D. No, because the data is insufficient.

4. A machine salesperson earns a base salary of Php 40, 000 plus a commission of Php 300 for every machine he sells. Write an equation that shows the total amount of income the salesperson earns if he sells x machines in a year.
   A. y = 40,000x + 300   B. y = 40,000x - 300
   C. y = 300x + 40, 000   D. y = 300x – 40,000

5. In problem number 4, what would be the salesperson's income if he sold 150 machines?
   A. Php 60, 000   B. Php 65, 000   C. Php 80, 000   D. Php 85, 000

6. In problem number 4, How many machines would the salesperson need to sell to earn a Php 100, 000 income?
   A. 200 machines   B. 220 machines   C. 250 machines   D. 300 machines

7. At a school play, children's tickets cost Php 3.00 each and adult tickets cost Php 7.00 each. The total amount of money earned from ticket sales equals Php 210.00. Write a linear function that relates the number of children's tickets sold to the number of adult tickets sold.
    A. 7x + 3y = 210   B. 7x – 3y = 210   C. 3x + 7y = 210   D. 3x – 7y = 210

8. In problem number 7, how many children's tickets were sold if 24 adult tickets were sold?
    A. 5 tickets   B. 8 tickets   C. 12 tickets   D. 14 tickets

9. Lin is tracking the progress of her plant's growth. Today the plant is 5 cm high. The plant grows 1.5 cm per day. What will be the height of the plan after 20 days?
    A. 30 cm   B. 35 cm   C. 40 cm   D. 45 cm

10. Jeremie is on diet. He currently weighs 260 pounds. He loses 4 pounds per month. After how many months will Jeremie reach his goal weight of 220 pounds?
    A. 3 months   B. 5 months   C. 10 months   D. 11 months

11. Alden opens a savings account with Php 350.00. He saves Php 150 per month. Assume that he does not withdraw money or make additional deposits. After how many months will Alden have more than Php 2,000?
    A. 5 months   B. 7 months   C. 9 months   D. 11 months

12. The Population of San Fernando City is 35,000 today. Every year the population of San Fernando City increases by 750 people. Approximately how many years will the population of San Fernando City excess 50, 000 people?
    A. 20 years   B. 23 years   C. 25 years   D. 28 years

13. Max sells lemonade for Php per cup and candy for Php 1.50 per bar. He earns Php 425 selling lemonade and candy. If Max sold 90 bars of candy, how many cups of lemonade did he sell?
    A. 140 cups   B. 142 cups   C. 145 cups   D. 148 cups

14. Amery has x books that weigh 2 pounds each and y books that weigh 3 books each. The total weight of his books is 60 pounds. If Amery has 10 3-pounds books, how many 2-pound books does he have?
    A. 8 books   B. 10 books   C. 15 books   D. 17 books

15. Jeremy used the linear model y = 20,000 + 0.3x to predict his total salary from achieving total sales of x. What is his base salary?
    A. Php 20, 000   B. Php 30,000   C. Php 40, 000   D. Php 50, 000

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Jumpstart

Previously, you studied about the concept of linear functions. Likewise, you have honed the knowledge and skills of graphing and illustrating a linear function using its domain, range, table of values, intercepts, and slope.

At this point, you are going to take everything you have learned about linear functions and apply it to real-life situations. This activity will enable you to solve real-life problems involving linear functions.

Activity 1: Let's Plant!
Mother Teresa bought a cactus plant online. Every day, she is tracking the progress of her plant's growth. Today the plant is 4 cm high. The plant grows 2 cm per day.

Complete the table below:

Number of days x	5	10	15	20
Height (in cm) y				

Guide Questions:
1. What is the dependent variable? Explain your answer.
2. What is the independent variable? Explain your answer.
3. Based on the completed table, would the relation represent a line?
4. What is the y – intercept?
5. What is the slope?
6. What the linear function that represent the height of the plant after y days.
7. What will be the height of the plant after 20 days?
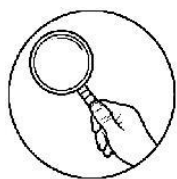
Discover

Solving Problems Involving Linear Functions

The above activity illustrates how the concept of linear functions can be used in solving real-life situations. In doing so, some helpful tips will guide on how to successfully come up with the correct solution.

1. Write the given information on the problem.
2. Identify which variables is independent and dependent.
3. Construct a table of values. Identify which values are x and y.
4. Identify the y – intercept b, slope, and write the equation of the line.
5. Use the equation of the line to predict values.

4

Consider the following examples:

Problem 1: You own newly born German shepherd. Suppose the dog weighs at 1 kg at birth. You have known from your friend that the monthly average weight gained by the dog is 5 kg. if the rate of increase of dog's weight every month is constant, determine an equation that will describe the dog's weight. Predict the dog's weight after five months using the mathematical equation.

Solution:

STEPS	SOLUTION
Step 1: Write down the given information.	The dog's weight is 1 kg at birth. Its weight is 6 kg after a month.
Step 2: Identify which variable is independent/dependent.	The dependent variable is the dog's weight. The independent variable is the time.
Step 3: Construct table of values.	Let x be the number of months and y be the dog's weight. <table><tr><td>x</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>y</td><td>1</td><td>6</td><td>11</td><td>16</td></tr></table>
Step 4: Identify the y – intercept b, slope, and write the equation of the line	The slope is 5 because the dog will gain 5 kg every month. The y – intercept is 1 because the dog weighs 1 kg at birth. The equation is $y = 5x + 1$.
Step 5: Use the equation of the line to predict values.	Predict the dog's weight after five months using the mathematical equation. Find the value of y. Using the equation, $y = 5x + 1$, let x be the number of months and y be the dog's weight. Let x = 5, $y = 5x + 1$ Write the linear model $y = 5(5) + 1$ Substitute x = 25 $y = 25 + 1$ Simplify $y = 26$ kg Add Therefore, the dog's weight after 5 months is 2 kilograms.

Problem 2:

Lara collected 5 kg of plastic bottles to recycle. She plans to collect an additional 2 kg per week. If Lara spent 5 weeks collecting plastic bottles, what is the total number of plastic bottles in kilograms did she collect?

Solution:

STEPS	SOLUTION
Step 1: Write down the given information.	Lara collected 5 kg of plastic bottles initially. Lara will collect 7 kg after a week.

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STEPS	SOLUTION
Step 2: Identify which variable is independent/dependent.	The dependent variable is total weight of the plastic bottles. The independent variable is the number of weeks.
Step 3: Construct table of values.	Let x be the number of weeks and y be the total weight. <table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>7</td><td>9</td><td>11</td><td>13</td></tr></table>
Step 4: Identify the y – intercept b, slope, and write the equation of the line	The slope is 2 because Lara collects an additional 2 kg of plastics every week. The y – intercept is 5 because Lara collected kg of plastic bottles initially. The equation is y = 2x + 5.
Step 5: Use the equation of the line to predict values.	Predict the weight of the plastic bottles. Find the value of x Using the equation, y = 2x + 5, let x be the number of weeks and y be the total weight. Let x = 5, $\quad$ y = 2x + 5 $\quad$ Write the linear model $\quad$ y = 2(5) + 5 $\quad$ Substitute x = 5 $\quad$ y = 10 + 5 $\quad$ Simplify $\quad$ y = 15 kg $\quad$ Add Therefore, after 5 weeks, Lara would collect a total of 15 kg of plastic bottles.

Problem 3: The population of Barangay Poblacion as of today is 2,000. Every year, its population increases by 300 people. In how many years will the population of Barangay Poblacion reach 3,500 people?

Solution:

STEPS	SOLUTION
Step 1: Write down the given information.	The population of Barangay Poblacion as of today is 2,000 After a year, the population of Barangay Poblacion is 2,300.
Step 2: Identify which variable is independent/dependent.	The dependent variable is the number of populations. The independent variable is the time.
Step 3: Construct table of values.	Let x be the number of years and y be number of people. <table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>2,300</td><td>2,600</td><td>2,900</td><td>3,200</td></tr></table>

Step 4: Identify the y – intercept b, slope, and write the equation of the line	The slope is 300 because the number of people of Barangay increases by 300 every year. The y – intercept is 2,000 since the number of population of Barangay Poblacion as of today is 2,000. The equation is y = 300x + 2,000.

Step 5: Use the equation of the line to predict values.	Predict the number of years will the population of Barangay Poblacion will reach 3,500 people.
	Using the equation, y = 300x + 2,000, Let x be the number of years and y be number of people. Find the value of x.
	Let y = 3500,
	       y = 300x + 2,000 Write the linear model
	      3500 = 300x + 2000 Substitute y = 3,500
	3,500 – 2,000 = 300x + 2,000 – 2,000 SPE
	     1,500 = 300x Simplify
	     <u>1,500 = 300x</u> DPE
	      300 300
	       x = 5 years
	
	Therefore, Barangay will reach a total population of 5,000 after 5 years.

Problem 4: Oscar and his family went to Baguio City for a vacation. Oscar wants to rent a bike. The rental shop charges an initial fee of Php 12.00 plus Php 8.00 per hour to rent the bike. If the total cost was Php 120.00, for how many hours was the bike rented? If he rented the bike for 5 hours, what would be the total cost?

Solution:

STEPS	SOLUTION
Step 1: Write down the given information.	The initial fee to rent a bike is Php 12.00 After an hour, the rental fee is Php 20.00.
Step 2: Identify which variable is independent/dependent.	The dependent variable is the total cost. The independent variable is the time.
Step 3: Construct table of values.	Let x be the number of hours and y be total cost. <table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>Php 20</td><td>Php 28</td><td>Php 36</td><td>Php 44</td></tr></table>
Step 4: Identify the y – intercept b, slope, and write the equation of the line	The slope is 8 because the total amount to pay for the bike rent increases by Php 8.00 every hour The y – intercept is 12 because the rental shop charges an initial fee of Php 12.00 The equation is y = 8x + 12.

Step 5: Use the equation of the line to predict values.	a. Predict the number of hours the bike was rented.
	   Using the equation, y = 8x + 12, let x be the number of hours and y be the total cost. Find the value of x.
	Let y = 120,
	        y = 8x + 12 Write the linear model
	     120 = 8x + 12 Substitute y = 120

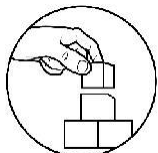|	

	120 – 12 = 8x + 12 - 12 SPE
	       108 = 8x Simplify
	      <u>108 = 8x</u> DPE
	       8 8
	      x = 13.5 hours
	Therefore, if the total cost of the rental fee is Php 120, Oscar rented the bike for 13.5 hours.
	
	b. Predict the total cost if Oscar rented the bike for 5 hours.
	   Using the equation, y = 8x + 12, let x be the number of hours and y be the total cost. Find the value of y.
	Let x = 5
	     y = 8x + 12 Write the linear model
	     y = 8 (5) + 12 Substitute x = 5
	     y = 40 + 12 Simplify
	     y = Php 52
	
	Therefore, if Oscar rented the bike for 5 hours, he would pay a total of Php 52.00.

Problem 5: A machine salesperson earns a base salary of Php 50, 000 plus a commission of Php 2,000 for every machine he sells. What would be the total income if he sold 50 machines? How may machines would the salesperson need to sell to earn a Php 80,000 income?

Solution:

STEPS	SOLUTION
Step 1: Write down the given information.	The machine salesperson earns a bases salary of Php 50,000 Every machine that he sells, he earns Php 52,000
Step 2: Identify which variable is independent/dependent.	The dependent variable is the total income. The independent variable is the number of machines he sold
Step 3: Construct table of values.	Let x be the number of machines he sold and y be the salesperson's total income <table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>Php 52,000</td><td>Php 54,000</td><td>Php 56,000</td><td>Php 58,000</td></tr></table>
Step 4: Identify the y – intercept b, slope, and write the equation of the line	The slope is 2000 because the salesperson's income increases by Php 2000 for each machine he sells. The y – intercept is Php 50, 000, the salesperson earns a Php 50, 000 salary in a year. The equation is y = 2000x + 50, 000
Step 5: Use the equation of the line to predict values.	a. Predict the salesperson's total income if he sold 50 machines. Using the equation, y = 2000x + 50,000, let x be the number of machines he sold, and y be the total income.

| | Find the value of y.
Let x = 50
      y = 2000x + 50,000   Write the linear model
      y = 2000 (50) + 50,000 Substitute x = 50
      y = 100,000 + 50,000   Simplify
      y = Php 150,000   Add
Therefore, the salesperson's total income is Php 150, 000 if he sold 50 machines.

b. Predict the number of machines would the salesperson need to sell to earn Php 80, 000.
Using the equation, y = 2000x + 50,000, let x be the number of machines he sold, and y be the total income.
Find the value of x.
Let y = 80, 000,
     y = 2000x + 50,000   Write the linear model
     80,000 = 2000x + 50,000   Substitute y = 80,000
80,000 – 50,000 = 2000x + 50,000-50,000   SPE
     30,000 = 2000x   Simplify
     <u>30,000</u> = <u>2000x</u>   DPE
     2,000   2000
      x = 15 machines

Therefore, the salesperson would sell 15 machines to earn a total income of Php 80,000. |

Explore

Activity 2: Fill Me In!

Below is a problem where you can solve by simply following the steps that can be found at the right side. Fill in the blank spaces with the needed solution. Write your answers on a separate sheet of paper.

Problem: A cell phone plan costs Php 500 per month for unlimited calling plus Php 3 per text messages. Write a linear model the represents the monthly cost of this cell phone plan if the user sends t text messages. If you send 200 text messages, how much would you pay according to this cellphone plan?

SOLUTION	WHAT TO DO
A cell phone plan costs Php 500 monthly. After every text message, you will pay a total of Php 503	Write down the given information.
The dependent variable is _____. The independent variable is _____.	Identify which variable is independent/dependent.

Let t be the number of text messages. Let y be the total payment of cellphone plan. <table><tr><td>T</td><td>1</td><td>2</td><td>3</td></tr><tr><td>Y</td><td>Php 503</td><td>Php</td><td>Php</td></tr></table>	Construct table of values
The slope is _____. The y – intercept is _____. The linear model is y = _____t + _____	Identify the y – intercept b, slope, and write the equation of the line.

Predict the total payment of the cellphone plan if you sent 200 text messages.
Let t = 200 text messages
 	
    y = _____t + _____   Write the linear model
    y = ____ (____) + ____   Substitute t = 200
    y = _____ + _____   Simplify
    y = Php _____   Add
 	
Therefore, you would pay Php _____ if you sent 200 text messages.
	Use the equation of the line to predict values.

> Now that you know the important ideas about the topic, let's go deeper by moving on to the next section.

Activity 3: Choose Wisely!

For sure by now, you are already familiar of how real-life applications on linear functions can be solves. You can take the challenge of finding the right answers to the problems found below. Be reminded to write your answers on a separate sheet of paper.

You can do it!

Problem: An electrician charges a basic fee of Php 400.00 plus Php 50.00 per hour of labor. If the electrician spent 5 hours of working, how much would you pay to him?
To start, assign a variable for the unknown. Say,

    Let x be the number of hours
      y be the total cost.

Consider the questions below. You are given two choices to each of the question. Put a 😊 on the empty box of your choice. Then you must support your answer why you have chosen such. Are you ready? Begin!

Questions:

1. What will be the slope and y -intercept that you will use based on the given information?

	m = 400; b = 50

	m = 50; b = 400

Support your choice:

_____

2. What will be the mathematical equation that you will obtain base on the information given?

	y = 50x + 400
	y = 400x + 50

Support your choice:

_____

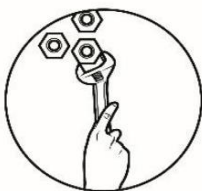3. Based on the mathematical equation, what is the correct table of values?

	x	1	2	3
	y	Php 450	Php 480	Php 520
	x	1	2	3
	y	Php 450	Php 500	Php 550

You can show your solution to support your answer:

_____

4. How much would you pay to the electrician after 5 hours?

	After 5 hours, you would pay Php 2,050.00
	After 5 hours, you would pay Php 650.00

You can show your solution to support your answer:

_____

Deepen

Activity 4: Formulate your Own Word Problem

This activity will enable you to formulate your own word problem involving linear functions and to answer it with or without using the 5-step procedure.

Directions: Formulate a word problem involving linear functions then solve. Be guided by the rubric below.

RUBRIC: PROBLEMS FORMULATED AND SOLVED

Score	Descriptors
6	Poses a more complex problem with 2 or more correct possible solutions and communicates ideas clearly; shows in-depth comprehension of the pertinent concepts and/or processes and provided explanations wherever appropriate.
5	Poses a more complex problem and finishes all significant parts of the solution and communicates ideas clearly; shows in-depth comprehension of the pertinent concepts and/or processes.
4	Poses a complex problem and finishes all significant parts of the solution and communicates ideas clearly; shows in depth comprehension of the pertinent concepts and/ or processes.
3	Poses a complex problem and finishes most significant parts of the selection communicates ideas clearly; shows comprehension of major concepts although neglects or misinterprets less significant ideas or details.
2	Poses a problem and finishes some significant parts of the solution and communicates ideas unmistakably but shows gaps on theoretical comprehension.
1	Poses a problem but demonstrates minor comprehension, not being able to develop an approach.

Question:

Did you encounter any difficulty in formulating real-life problem involving linear functions? Explain your answer.

_____

Gauge

Post-Test

Directions: Find out how much have you learned from the lesson. Choose the letter which you think best answer to the question. Write your answer in a separate sheet of paper.

For items 1 and 2, refer to the situation below.

The height h of the candle in centimeters is a function of the time t in hours it has been burning. It is described by the table below:

t	0	1	2	3	4	5
$h(t)$	10	8	6	4	2	0

1. Write the linear function *h* described by the table above?
   A. h (t) = 2t – 10   B. h (t) = 2t + 10   C. h (t) = 10 - 2t   D. h (t) = 10 - t

2. How long will it take the candle be completely melted?
   A. 3   B. 4   C. 5   D. 6

For items 3 and 4, refer to the situation below.

> Jose, who is the SSG Business Manager, was given the task by the SSG President to canvass for a tarpaulin printing. He knew that in printing, the charge of tarpaulin printing is Php 12 per square foot and Php 100 for the lay outing.

3. Which of the following equations best represents the total cost *y* with *x* number of square feet including lay outing fee?
   A. y = 12x – 100   B. y = 12x + 100   C. y = 100x – 12   D. y = 100x +12

4. The SSG President told Jose that the dimensions of the tarpaulin are 5 feet by 4 feet. How many square feet is the tarpaulin? How much should Jose pay for printing ad?
   A. 20 sq. ft; Php 420   B. 20sq.ft; Php 420
   C. 9 sq. ft; Php 320   D. 9 sq. ft; Php 208

5. Mang Pedro sells lechon manok. The following linear equation describes the profit P he makes when he sells *x* lechon manok. *P = 30x – 140 where P is in pesos.* What is the profit when he sells 10 lechon manok?
   A. Php 160   B. Php 180   C. Php 200   D. Php 250

6. The number of people in Barangay 707 has been increasingly linearly with time since 1970. The linear equation relating the number of people, N to the number of years past 1970, *t* is in N = $\frac{10\ 000}{3}t$ + 70 000. Find the population in 2016.
   A. 200,000   B. 210,000   C. 220,000   D. 223, 333

7. Angela opened a savings account with Php 500.00. Each month after she pays her bills, she will have Php 100 left over to make a deposit. How many months will it take her to save Php 2,000 saved?
   A. 8 months   B. 12 months   C. 15 months   D. 16 months

8. Jeremie bought a car and put Php 300,000 down and make monthly payments of Php 50,000. If the car cost Php 500, 000, how many years will it take me to pay it off?
   A. 4 years   B. 5 years   C. 6 years   D. 7 years

9. Your cellphone cost Php 25, 000 for the upgrade and Php 200 per month. How much will you have paid after 2 years with this phone?
   A. Php 30, 000   B. Php 29, 800   C. Php 28, 500   D. Php 27, 000

10. Maxwell sells milk tea for Php 50.00 per cup and cupcake for Php 20.00 per cup. He earns Php 1,000 selling milk tea and cupcake. If Maxwell sold 20 cupcakes, how many milk teas did he sell?
A. 20   B. 30   C. 50   D. 60

11. A cellphone salesperson earns a base salary of Php 20, 000 plus a commission of Php 500 for every cellphone he sells. What would be the salesperson's income if he sold 30 cellphones?
A. Php 20, 000   B. Php 35, 000   C. Php 50, 000   D. 65, 000

12. Alexis is one diet. He currently weights 80 kg. He loses 5 kg per month. After how many months will Alexis reach his goal of 40 kg?
A. 8 months   B. 9 months   C. 10 months   D. 11 months

13. Joshua resides in a certain city, but he starts a new job in the neighboring city. Every Monday, he drives his new car 90 kilometers from his residence to the office and spends the week in company apartment. He drives back home every Friday. After 4 weeks for this routinely activity, his car's odometer shows that he has travelled 870 kilometers since he bought the car. Write a linear model which gives the distance y covered by the car as a function of x number of weeks since he used the car.
A. y = 180x + 150   B. y = 90x + 510   C. y = 180x + 510   D. y = 90x + 150

14. You own a new cat. Suppose the cat weights 2 kg at birth. You have known form your friend that the monthly average weight gained by the cat is 3 kg. If the rate of increase of the cat's weight every month is constant. Predict the cat's weight after 4 months.
A. 10 kg   B. 12 kg   C. 14 kg   D. 16 kg

15. You are one of the trainers of a certain TV program on weight loss. You notice that when the trainees run, the number of calories c burned is a function of time t in minutes is indicated below:

t	1	2	3	4	5
$c(t)$	13	26	39	52	65

As a trainer, what best piece of advice could you give to the trainees to maximize weight loss?
A. Spend more time for running and eats as much as you can.
B. Spend more time for running and eat nutritious foods.
C. Spend less time for running
D. Sleep very late at night.

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References

Printed Materials:

- Orlando A. Oronce and Marilyn O. Mendoza, *Exploring Math 8 Textbook* , 2018
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Website:

- www.MathWorksheetsGo.com
- https://www.youtube.com/watch?v=tw5V15aBSXY