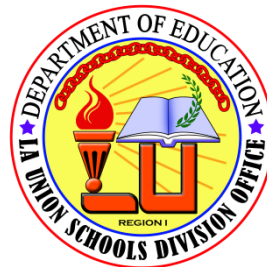


Senior High School



General Mathematics

Module 10:

Solving Problems Involving Simple and Compound Interest



AIRs - LM

GENERAL MATHEMATICS

Module 10: Solving Problems Involving Simple and Compound Interest
Second Edition, 2021

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Region I

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Senior High School

General Mathematics
Module 10:
Solving Problems Involving Simple
and Compound Interest



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.



Target

There are different methods that you can use to compute the interest on your money in any investment. The common method that you may have encountered in your previous lessons is the simple interest rate. You relate to money in terms of your investment in simple interest. The other interest rate is called the compound interest rate.

In your previous lesson, you learned to illustrate simple and compound interests. Your knowledge of computing interest, maturity value, future value, and present value will be useful in solving problems involving simple and compound interest.

In this module, you need to apply the previous concepts to solve problems dealing with interests and apply them to dealing with daily life problems that you may encounter.

After going through this module, you are expected to:

1. solve problems involving simple and compound interests **(M11GM-IIb-2)**.

Learning Objectives:

1. define simple and compound interests
2. determine the formula to be used in solving simple interest and compound interest problems.
3. compute for interest, future value, and present value in simple and compound interest problems

Pretest

Directions: Read and analyze each item carefully. Write the letter of the best answer using a separate sheet of paper.

1. What is the amount of money borrowed or invested on the origin date?
A. Annuity B. Interest C. Loans D. Principal
2. Which of the following is the amount paid or earned for the use of money?
A. Bonds B. Interest C. Loans D. Stocks
3. What do you call a date on which the money borrowed, or loan is to be completely repaid?
A. Loan B. Maturity C. Present D. Origin
4. Which of the following statements best illustrates a simple interest?
A. It is a share in the ownership of a company.
B. It is the interest that is computed on the principal and then added to it.
C. It is a sequence of payments done periodically and in equal amounts.
D. It is the interest that is computed on the principal and on the accumulated past interests.
5. John borrowed ₱ 45,400 at 10% simple interest rate. How much should he repay after 3 years?
A. ₱ 13, 620.00 B. ₱ 46,762.00
C. ₱ 59, 020.00 D. ₱ 104, 420.00
6. How long will a principal of ₱ 30,000 that earn an interest of ₱ 4,500 at 3% simple interest?
A. 5 years B. 10 years
C. 15 years D. 20 years
7. What is the maturity value when P 40,000 is compounded annually at an interest rate of 2.5% in 4 years?
A. ₱ 30, 000.75 B. ₱ 42, 351.35
C. ₱ 44, 152.52 D. ₱ 45, 000.00
8. Suppose ₱ 55,000 will be due in 9 years at 7% compounded annually. How much is the principal amount?
A. ₱ 20, 000.00 B. ₱ 22, 465.25
C. ₱ 25, 000.75 D. ₱ 29, 916.36
9. What is the frequency of conversion when money is compounded quarterly?
A. 1 B. 2 C. 4 D. 12
10. What is the interest rate in a conversion period (j) if the annual interest rate is 7.5% compounded quarterly?
A. 0.050 B. 0.01875 C. 0.125 D. 0.575

11. What will be the total number of conversion periods if money is compounded quarterly with 2 years and 6 months term?
A. 4 B. 6 C. 8 D. 10
12. What is the maturity value if Mark deposited ₱ 35,000 in a bank at 3% compounded semi-annually for 12 years?
A. ₱ 45, 000.00 B. ₱ 50, 032.60
C. ₱ 55, 000.00 D. ₱ 62, 275.50
13. Mr. De Jesus made an investment for 5 years with an interest rate of 6% compounded semi-annually. What is the frequency of conversion?
A. 2 B. 4 C. 6 D. 12
14. What will be the interest rate in a conversion period if the annual interest rate is 16% compounded quarterly?
A. 4% B. 40% C. 0.004% D. 4.05%
15. What is the compounding frequency if the total number of conversion periods is 12 and the term is 6 years?
A. Annually B. Monthly
C. Quarterly D. Semi-annually



Jumpstart

Activity 1: Read and Analyze Me!

Directions: Read and analyze the situation carefully. Then, answer the questions below.

Mr. De Jesus wants to invest his money in a certain company. He asks Mr. Velasquez, his friend, to help him choose the best investment.

Mr. De Jesus has ₱ 200, 000 to invest. His friend presented to him a table that would show the future value of his money using two methods in computing for the interest. The interest rate in both schemes is at 3.5%.

Year	Scheme 1	Scheme 2
1	₱ 207, 000.00	₱ 207, 000.00
2	₱ 214, 000.00	₱ 214, 245.00
3	₱ 221, 000.00	₱ 221, 743.58
4	₱ 228, 000.00	₱ 229, 504.60
5	₱ 235, 000.00	₱ 237, 537.26
6	₱ 242, 000.00	₱ 245, 851.07
7	₱ 249, 000.00	₱ 254, 455.85

Questions:

Directions: Write the letter of the correct answer in a separate sheet of paper.

- Which scheme shows simple interest?
A. Scheme 1
B. Scheme 2
C. Both Scheme 1 and 2
D. None of the above
- Which scheme shows compound interest?
A. Scheme 1
B. Scheme 2
C. Both Scheme 1 and 2
D. None of the above
- How much would he earn if he would invest his money in scheme 1 for 12 years?
A. ₱ 77, 000.00
B. ₱ 84, 000.00
C. ₱ 105, 000.00
D. ₱ 112, 000.00
- How much would Mr. De Jesus earn if he wishes to invest until the 16th year in scheme 1?
A. ₱ 112, 000.00
B. ₱ 126, 000.00
C. ₱ 133, 000.00
D. ₱ 140, 000.00
- How much would Mr. De Jesus earn in scheme 2 for the 20th year?
A. ₱ 140, 000.00
B. ₱ 157, 000.00
C. ₱ 197, 957.77
D. ₱ 397, 957.77



Discover

Simple Interest

Simple interest is charged only on the loan amount, called the principal. Thus, interest on the interest previously is not included. Simple interest is calculated by multiplying the principal by the rate of interest by the number of payment periods in a year.

Annual Simple Interest

$$I_s = Prt$$

where:

I_s = simple interest

P = principal, or the amount invested or borrowed

r = simple interest rate

t = term or time in years

Example 1. What will be the interest earned for a loan of ₱ 25, 000 at 12% simple interest for 5 years?

Given: $P = ₱ 25, 000$ $r = 12\% = 0.12$ $t = 5$ years

Find: I_s

Solution: $I_s = Prt$

$$I_s = (25,000)(0.12)(5)$$

$$I_s = ₱ 15,000$$

The interest earned is ₱ 15, 000.

Example 2. When invested at an annual interest rate of 6%, the amount earned ₱10, 500 in simple interest in 2 years. How much money was originally invested?

Given: $r = 6\%$ or 0.06 $t = 2$ years $I_s = ₱10, 500$

Find: P

Solution:

$$P = \frac{I_s}{rt}$$

$$P = \frac{10,500}{(0.06)(2)}$$

$$P = ₱ 87,500$$

The amount invested is ₱ 87, 500.

Example 3. An entrepreneur applies for a loan amounting to ₱ 400, 000 in a bank and the simple interest of which is ₱ 150, and 500 for 3 years. What interest rate is being charged?

Given: $P = ₱ 400, 000$ $t = 3$ years $I_s = 150, 500$

Find: r

$$\begin{aligned}\text{Solution: } r &= \frac{I_s}{Pt} \\ r &= \frac{150,500}{(400,000)(3)} \\ r &= \mathbf{0.125 = 12.5\%}\end{aligned}$$

The bank charged an annual interest rate of 12.5%.

Example 4. How long will ₱ 100, 000 earn a simple interest of ₱ 20, 000 at 2% per annum?

Given: $I_s = ₱ 20,000$ $P = ₱ 100, 000$ $r = 2\%$ or 0.02

Find: t

$$\begin{aligned}\text{Solution: } t &= \frac{I_s}{Pr} \\ t &= \frac{20,000}{(100,000)(0.02)} \\ t &= \mathbf{10 \text{ years}}\end{aligned}$$

Example 5. How much interest is charged when ₱ 50, 000 is borrowed for 9 months at an annual interest rate of 10%?

Given: $P = ₱ 50, 000$

$r = 10\% = 0.10$

$t = \frac{9}{12}$ year = 0.75 year

Note: To convert units of time from months to years, use these formulae:

$$\begin{array}{ll}\text{Time in months} & t = \frac{\text{no. of months}}{12}\end{array}$$

Find: I_s

$$\begin{aligned}\text{Solution: } I_s &= Prt \\ I_s &= (50,000)(0.10)(0.75) \\ I_s &= \mathbf{₱ 3,750}\end{aligned}$$

The simple interest charged is ₱ 3, 750.

Example 6. Teresa borrowed ₱ 120,000 from her uncle. If Teresa agreed to pay an 8% annual interest rate, calculate the amount of interest she must pay if the loan period is (a) 2 years, (b) 9 months, and (c) 18 months

Solution:

a. Given: $P = ₱ 120,000$ $r = 8\%$ or 0.08 $t = 2$ years

Find: I_s

$$\begin{aligned}I_s &= Prt \\ I_s &= (120,000)(0.08)(2) \\ I_s &= \mathbf{₱ 19,200}\end{aligned}$$

b. Given: $P = \text{P } 120,000$ $r = 8\% \text{ or } 0.08$ $t = 9 \text{ months or } \frac{9}{12} \text{ year}$
Find: I_s

$$I_s = Prt$$

$$I_s = (120,000)(0.08)\left(\frac{9}{12}\right)$$

$$I_s = \text{P } 7,200$$

c. Given: $P = \text{P } 120,000$ $r = 8\% \text{ or } 0.08$ $t = 18 \text{ months or } \frac{18}{12} \text{ year}$
Find: I_s

$$I_s = Prt$$

$$I_s = (120,000)(0.08)\left(\frac{18}{12}\right)$$

$$I_s = \text{P } 14,400$$

Example 7. Calculate the interest if you get a loan of P 200, 000 from a bank at 10.5% interest rate for 180 days.

Given: $P = \text{P } 200,000$

$$r = 10.5\% = 0.105$$

$$t = \frac{180}{365} \text{ year} = 0.493 \text{ year}$$

Note: To convert units of time from days to years, use these formulas:

$$\text{Time in days (for exact method)} \quad t = \frac{\text{no.of days}}{365}$$

$$\text{Time in days (for ordinary method)} \quad t = \frac{\text{no.of days}}{360}$$

Find: I_s

Solution:

$$I_s = Prt$$

$$I_s = (200,000)(0.105)\left(\frac{180}{365}\right)$$

$$I_s = \text{P } 10,356.17$$

Compound Interest

Many banks' savings accounts pay compound interest. In this case, the interest is added to the account at regular intervals, and the sum becomes the new basis for computing interest. Compound interest is a type of interest where the amount of interest generated in a given year is based on both the starting amount and the previously earned interest.

Future Value (F) at Compound Interest

$$F = P(1 + r)^t$$

Present Value (P) at Compound Interest

$$P = \frac{F}{(1 + r)^t}$$

or

$$P = F(1 + r)^{-t}$$

where:

P = principal or present value

F = maturity (future) value at the end of the term

r = interest rate

t = term/time in years

The compound interest I_c is given by

$$I_c = F - P$$

Example 1. What is the interest of ₱ 25,000 if invested at 4.5% compounded annually in 3 years?

Given: $P = ₱ 25,000$ $r = 4.5\%$ or 0.045 $t = 3$ years

Find: I_c

Solution:

$$\begin{aligned} F &= P(1 + r)^t \\ F &= (25,000)(1 + 0.045)^3 \\ F &= 28,529.15 \end{aligned}$$

$$\begin{aligned} I_c &= F - P \\ I_c &= 28,529.15 - 25,000 \\ I_c &= \text{₱ } 3,529.15 \end{aligned}$$

The interest is ₱ 3, 529.15.

Example 2. If Mr. Dela Cruz invests ₱ 200,000 with a compound interest rate of 3.5% for 10 years, how much money does Mr. Dela Cruz have after 10 years? How much does he earn?

Given: $P = ₱ 200,000$ $r = 3.5\%$ or 0.035 $t = 10$ years

Find: F, I_c

Solution:

$$\begin{aligned} F &= P(1 + r)^t \\ F &= (200,000)(1 + 0.035)^{10} \\ F &= 282,119.75 \end{aligned}$$

$$\begin{aligned} I_c &= F - P \\ I_c &= 282,119.75 - 200,000 \\ I_c &= \text{₱ } 82,119.75 \end{aligned}$$

Mr. Dela Cruz will have ₱ 282,119.75 after 10 years of investment using the interest that is compounded annually. He earned ₱ 82,119.75 after 10 years.

Example 3. What are the amounts of interest and maturity value of a loan for ₱ 20,000 at 6% compound interest for 3 years?

Given: $P = ₱ 20,000$ $r = 6\%$ or 0.06 $t = 3$ years

Find: F, I_c

Solution:

$$\begin{aligned} F &= P(1 + r)^t \\ F &= (20,000)(1 + 0.06)^3 \\ F &= \text{₱ } 23,820.32 \end{aligned}$$

$$I_c = F - P$$

$$I_c = 23,820.32 - 20,000$$

$$I_c = \text{₱ } 3,820.32$$

The maturity value is ₱ 23,820.32 and the interest is ₱ 3,820.32

Example 4. Ms. Bautista aims to have her investment grow to P 600, 000 in 4 years. How much should she invest in an account that pays 5% compounded annually?

Given: $F = \text{₱ } 600,000$ $r = 5\% \text{ or } 0.05$ $t = 4 \text{ years}$

Find: P

Solution:

$$P = \frac{F}{(1 + r)^t}$$

$$P = \frac{600,000}{(1 + 0.05)^4}$$

$$P = \text{₱ } 493,621.48$$

She should invest ₱ 493, 621. 48.

Compounding More than Once a Year

In computing compound interest and the compound amounts when compounded monthly, quarterly, semi-annually, and annually, the frequency of conversion period increases, and the compound interest also increases as well as the compound amount. The formula in finding compound amount when compounding is computed more than once a year.

Maturity Value (F), Compounding m times a year

$$F = P(1 + j)^n$$

Present Value (P) at Compound Interest

$$P = \frac{F}{(1 + j)^n}$$

where:

F = maturity value

P = principal

j = rate of interest for each conversion period

$$j = \frac{i^m}{m} = \frac{\text{annual rate of interest}}{\text{frequency of conversion}}$$

t = term/time in years

$n = t \times m$

Table 1. Frequency of Conversion

Compounding Frequency	Frequency of Conversion (m)
Compounded Annually	1
Compounded Semi-annually	2
Compounded Quarterly	4
Compounded Monthly	12
Compounded Daily	365

Example 1. Find the maturity value and interest if ₱ 10, 000 is deposited in a bank at 2% compounded quarterly for 5 years.

Given: $P = ₱ 10,000$ $i^m = 2\%$ or 0.02 $t = 5$ years $m = 4$

Find: F, I_c

Solution:

Compute for the interest rate in a conversion period (j)

$$j = \frac{i^m}{m} = \frac{0.02}{4} = 0.005$$

Compute for the total number of conversion periods

$$n = m \times t = (4)(5) = 20$$

Compute for the maturity value

$$F = P(1 + j)^n$$

$$F = (10,000)(1 + 0.005)^{20}$$

$$\mathbf{F = ₱ 11,048.96}$$

The compound interest is

$$I_c = F - P$$

$$I_c = 11,048.96 - 10,000$$

$$\mathbf{I_c = ₱ 1,048.96}$$

Example 2. Allan borrows ₱ 50, 000 and promises to pay the principal and interest at 12% compounded monthly. How much must he repay after 6 years?

Given: $P = ₱ 50,000$ $i^m = 12\%$ or 0.12 $t = 6$ years $m = 12$

Find: F

Solution:

$$F = P(1 + j)^n$$

$$F = 50,000\left(1 + \frac{0.12}{12}\right)^{(12)(6)}$$

$$F = 50,000(1 + 0.01)^{72}$$

$$F = 50,000(1.01)^{72}$$

$$\mathbf{F = ₱ 102,354.97}$$

Thus, Allan must pay ₱102, 354.97 after 6 years.

Example 3. Michael received a monetary graduation gift from his parents amounting to ₱ 5, 000. He decided to place his graduation money in an account and leave it there for 2 years in time for his college degree. He puts his money in an account that gives 3.5% interest compounded quarterly. How much will be in Michael's account at the end of two years?

Given: $P = ₱ 5,000$ $i^m = 3.5\%$ or 0.035 $t = 2$ years $m = 4$

Find: F, I_c

Solution:

Compute for the interest rate in a conversion period (j)

$$j = \frac{i^m}{m} = \frac{0.035}{4} = 0.00875$$

Compute for the total number of conversion periods

$$n = m \times t = (4)(2) = 8$$

Compute for the maturity value

$$F = P(1 + j)^n$$

$$F = (5,000)(1 + 0.00875)^8$$

$$F = ₱ 5,360.91$$

Michael will have ₱ 5, 360.91 in his account at the end of two years.

Example 4. What is the present value of ₱ 25, 000 due in 2 years and 6 months if money is worth 10% compounded quarterly?

Given: $F = ₱ 25,000$ $i^m = 10\%$ or 0.10 $t = 2\frac{1}{2}$ years $m = 4$

Find: P

Solution:

Compute for the interest rate in a conversion period (j)

$$j = \frac{i^m}{m} = \frac{0.10}{4} = 0.025$$

Compute for the total number of conversion periods (n)

$$n = m \times t = (4)\left(2\frac{1}{2}\right) = 10$$

Compute for the present value

$$P = \frac{F}{(1+j)^n}$$

$$P = \frac{25,000}{(1+0.025)^{10}}$$

$$P = ₱ 19,529.96$$

Example 5. How much should you deposit in a bank that pays 2% compounded quarterly to accumulate an amount of ₱ 80, 000 in 6 years?

Given: $F = ₱ 80, 000$ $i^m = 2\% \text{ or } 0.02$ $t = 6 \text{ years}$ $m = 4$

Find: P

Solution:

Compute for the interest rate in a conversion period (j)

$$j = \frac{i^m}{m} = \frac{0.02}{4} = 0.005$$

Compute for the total number of conversion periods (n)

$$n = m \times t = (4)(6) = 24$$

Compute for the present value

$$P = \frac{F}{(1+j)^n}$$

$$P = \frac{80,000}{(1+0.005)^{24}}$$

$$\mathbf{P = ₱ 70,974.85}$$



Explore

Activity 1: Fill Me!

Complete the tables by solving for the unknown.

A. Simple Interest

Principal (P)	Rate (r)	Time (t)	Interest (I_s)
₱ 10, 000	8%	15	(1)
(2)	2%	5	₱ 10, 000
₱ 360, 000	(3)	2	₱ 3, 600
₱ 500, 000	10.5%	(4)	₱ 175, 500
₱ 800, 000	9.25%	2.5	(5)

B. Compound Interest

Principal (P)	Rate (r)	Time (t)	Compound Interest (I_c)	Maturity Value (F)
₱ 35, 600	6%	9 months	(6)	(7)
₱ 140, 250	10%	15 months	(8)	(9)
₱ 75, 800	8.5%	2years	(10)	(11)
(12)	2%	5	(13)	₱ 50, 000
(14)	9.25%	2.5	(15)	₱ 100, 000

Activity 2: Solve Me!

Solve the following problems on simple and compound interests.

- Irene invested ₱ 25, 000 at 16% simple interest for 6 years.
 - How much interest will be earned?
 - What is the future value of the investment at the end of 6 years?
- In a certain bank, Marie invested ₱ 88, 000 in a time deposit that pays 1.5% compound interest in a year. How much will she have after 6 years? How much interest will she gain?
- Kaye aims to accumulate an amount of ₱ 180, 000 in 5 years and 6 months. Find the present value on the following investments and tell which investment requires a smaller principal.
 - Simple interest of 8.5%
 - 8.5% compounded semi-annually
- Lina is going to make investments for her daughter's education in 5 years' time. If she is going to invest her ₱ 30, 000 for 2.5% compounded semi-annually for 5 years, how much would her money be at the end of 5 years?



Deepen

Directions: Analyze and solve the problem carefully. Show complete and clean solutions.

Mr. Cruz thought of investing or saving some of his money after all the leisure's that he enjoyed. He believes in the saying "A penny saved is a penny earned". With ₱ 20, 000 remaining cash on hand, he plans to save it in a bank, but he is still unsure where to invest the money. Bank A offers him a simple interest of 8.5% per annum. Bank B offers 8.5% compounded semi-annually. Help him solve his problem by computing for the **future value** of his money every year until the 10th year.

Year	Bank A	Bank B
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

How much will be his money after 10 years? Which bank offers the best investment? Why?

Your output will be graded using this rubric.

Criteria	Excellent 10 points	Satisfactory 8 points	Developing 5 points	Beginning 2 points
Accuracy of the Solution	Shows accurate solution.	Shows solution with minimal errors.	Shows solution with plenty of errors.	The solution is all erroneous.
Mathematical Concept	Shows excellent understanding of the concept of solving problems involving simple and compound interest.	Shows clear understanding of the concept of solving problems involving simple and compound interest.	Shows limited understanding of the concept of solving problems involving simple and compound interest.	Did not apply the concept of solving problems involving simple and compound interest.



Gauge

Directions: Read and analyze each item carefully. Write the letter of the best answer using a separate sheet of paper.

1. When the annual interest rate is 16% compounded quarterly the interest rate in a conversion period is _____.
A. 0.004% B. 4.00% C. 4.05% D. 40%
2. Which of the following is calculated by multiplying the principal by the rate of interest by the number of payment periods in a year?
A. Annuity B. Business Loans
C. Compound Interest D. Simple Interest
3. Which of the following statements best illustrates a compound interest?
A. It is the share in the ownership of a company.
B. It is the interest that is computed on the principal and then added to it.
C. It is a sequence of payments done periodically and in equal amounts.
D. It is the interest that is computed on the principal and on the accumulated past interests.
4. Find the total number of conversion periods when money is compounded quarterly with 2 years and 6 months term.
A. 4 B. 6 C. 8 D. 10
5. Suppose ₱ 55,000 will be due in 9 years at 7% compounded annually. How much is the principal amount?
A. ₱ 20, 000.00 B. ₱ 25, 000.75
C. ₱ 22, 465.25 D. ₱ 29, 916.36
6. Find the maturity value if Mark deposited ₱ 35,000 in a bank at 3% compounded semi-annually for 12 years.
A. ₱ 45, 000.00 B. ₱ 50, 032.60
C. ₱ 55, 000.00 D. ₱ 62, 275.50
7. Mr. Santos invested a certain amount in a bank at 6% simple interest per year. The amount he received for 7 years is ₱ 105,000. How much did Mr. Santos invested?
A. ₱ 60, 235.36 B. ₱ 70, 000.25
C. ₱ 73, 943.66 D. ₱ 80, 265.25
8. What is the frequency of conversion when money is compounded monthly?
A. 1 B. 2 C. 4 D. 12

9. When the total number of conversion periods is 72 and the term is 6 years, then money is compounded _____.
- A. Annually
C. Quarterly
- B. Monthly
D. Semi-annually
10. An interest of ₱ 760 was earned on an investment for 9 months at 3% interest rate. How much was invested?
- A. ₱ 2,052.00
C. ₱ 20, 520.00
- B. ₱ 2,814.81
D. ₱ 33, 777.78
11. Peter borrowed ₱ 100, 000 at 8% compounded annually. How much will he be paying after 2 years?
- A. ₱ 116, 640.00
C. ₱ 161, 460.25
- B. ₱ 121, 650.00
D. ₱ 146, 608.75
12. What amount must be deposited by a student in a bank that pays 2% compounded annually so that after 12 years he will have ₱ 100, 000?
- A. ₱ 75, 550.00
C. ₱ 80, 000.50
- B. ₱ 78, 849.32
D. ₱ 85, 250.36
13. Christian lends ₱ 60, 000 for 4 years at 5% compounded semi-annually. Find the future value.
- A. ₱ 70, 000.00
C. ₱ 73, 104.17
- B. ₱ 72, 250.25
D. ₱ 75, 257.36

For items nos. 14-15, use the problem below.

Marco deposited ₱ 20, 000 that gives 2% compounded quarterly and let it stay there for 5 years.

14. Find the future value.
- A. ₱ 25, 520. 25
C. ₱ 32, 278.23
- B. ₱ 22, 097.91
D. ₱ 35, 000.00
15. What is the interest of this amount?
- A. ₱ 5, 520.25
C. ₱ 12, 278.23
- B. ₱ 2, 097.91
D. ₱ 15, 000.00

References

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