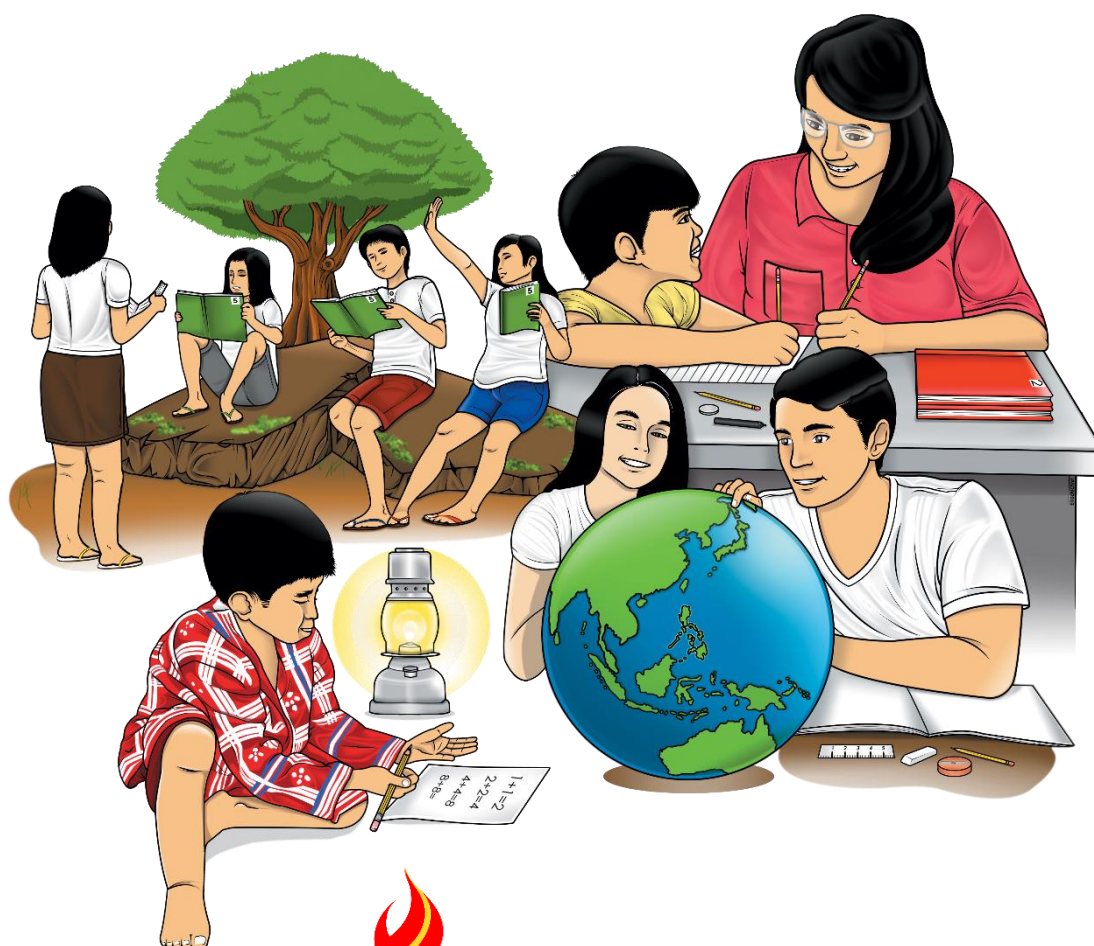


# Mathematics

## Quarter 1 – Module 10: Scientific Notations & Solving Problems involving Real Numbers



**Mathematics – Grade 7**

**Alternative Delivery Mode**

**Quarter 1 – Module 10: Scientific Notations & Solving Problems Involving Real Numbers**  
**First Edition, 2020**

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Published by the Department of Education

Secretary: Leonor Magtolis Briones

Undersecretary: Diosdado M. San Antonio

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**Printed in the Philippines by Department of Education – SOCCSKSARGEN Region**

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# **Mathematics**

## **Quarter 1 – Module 10: Scientific Notations & Solving Problems involving Real Numbers**

# Introductory Message

For the facilitator:

Welcome to the Mathematics 7 Alternative Delivery Mode (ADM) Module Scientific Notations & Solving Problems involving Real Numbers!

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:



## ***Notes to the Teacher***

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the Mathematics 7 Alternative Delivery Mode (ADM) Module on Scientific Notations & Solving Problems involving Real Numbers!

The hand is one of the most symbolized part of the human body. It is often used to depict skill, action and purpose. Through our hands we may learn, create and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:



***What I Need to Know***

This will give you an idea of the skills or competencies you are expected to learn in the module.



***What I Know***

This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.



***What's In***

This is a brief drill or review to help you link the current lesson with the previous one.



***What's New***

In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.



***What is It***

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.



***What's More***

This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.



***What I Have Learned***

This includes questions or blank sentence/paragraph to be filled in to process what you learned from the lesson.



***What I Can Do***

This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.



### **Assessment**

This is a task which aims to evaluate your level of mastery in achieving the learning competency.



### **Additional Activities**

In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.



### **Answer Key**

This contains answers to all activities in the module.

At the end of this module you will also find:

### **References**

This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!



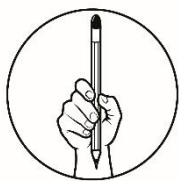
## ***What I Need to Know***

Congratulations on making this far! How is your real numbers journey on the previous module? Have you mastered the rules? This module will be exciting activities on the Scientific Notations. Good luck dear!

After using this module, you are expected to:

1. write numbers in scientific notations and vice versa; and
2. represents real-life situations and solve problems involving real numbers.

***Learning Competency Code: M7NS-Ii-1 & M7NS-Ij-1***



## ***What I Know***

I. Read each item carefully and choose the letter of the correct answer. Write your answer on the space before the number.

- \_\_\_\_\_ 1. Which of the following represents a standard notation?  
A.  $2.30 \times 10^2$       B.  $2.3 \times 10^3$       C. 0.000023      D.  $2.3 \times 1000$
- \_\_\_\_\_ 2. What is the standard notation of  $1.06 \times 10^4$ ?  
A. 16000      B. 10600      C. 1600000      D. 1060000
- \_\_\_\_\_ 3. Earth's approximate distance from the Sun is about  $1.4956 \times 10^8$  km.  
Which of the following notation represents the distance?  
A. 1,495,600      B. 14,956,000      C. 149,560,000      D. 1,495,600,000
- \_\_\_\_\_ 4. It allows us to express a very small or very large number in a compact form.  
A. Scientific Notation      C. Real Numbers  
B. Standard form      D. Standard Notation
- \_\_\_\_\_ 5. Which of the following could not be able to express in scientific notation?  
A. 2.30000      B.  $\frac{2}{3}$       C. -0.000219      D. 32 million
- \_\_\_\_\_ 6. In the given expression  $7.03 \times 10^{-2}$ , which of the following is the coefficient or the number part?  
A. 7      B. 7.03      C. -2      D. 10
- \_\_\_\_\_ 7. Which of the following represents  $6.7 \times 10^{-2}$  in standard notation?  
A. 0.067      B. 0.0067      C. 670      D. 6700
- \_\_\_\_\_ 8. According to the history, the first pandemic was the "Spanish flu", also known as the 1918 flu pandemic who killed about 10 million people. What is 10 million in scientific notation?  
A.  $1 \times 10^6$       B.  $1 \times 10^7$       C.  $1 \times 10^5$       D.  $2 \times 10^8$
- \_\_\_\_\_ 9. The planet Mercury has an estimated distance of  $1.35 \times 10^8$  miles from the Sun. How far is Mercury from the Sun in standard notation?  
A. 13,500 miles      C. 13,500,000 miles  
B. 1,350,000 miles      D. 135,000,000 miles



- \_\_\_\_\_ 10. Which of the following has the negative exponent on the 10 when converted into scientific notation?  
A. 0.00089                      B. 800009                      C. -8000                      D. 89
- \_\_\_\_\_ 11. In his first month at school, Dave saved P128.00. At the next month at school, Dave saved P152.00. Then he donated P105.00 of his savings. How much money does Jim have left now?  
A. P155.00                      B. P165.00                      C. P175.00                      D. 185.00
- \_\_\_\_\_ 12. Christine spent P2,100 for shoes. This was P700 less than twice what she spent for a blouse. How much was the blouse?  
A. P1,000                      B. P1,200                      C. P1,400                      D. P1,600
- \_\_\_\_\_ 13. Today, Berto's age (B) is 4 times Carlo's age. In 4 years, what will Charlie's age be in terms of B?  
A.  $4B+4$                       B.  $4(B+4)$                       C.  $\frac{B}{4} + 4$                       D.  $\frac{B+4}{4}$
- \_\_\_\_\_ 14. An ant moves forward 21.2 inches in one hour. It turns around and crawls 15.3 inches in the next hour. Finally, in the third hour, it turns around again and crawls 6.4 more inches. How much forward progress did the ant make in 3 hours?  
A. 9.3 inches                      C. 11.3 inches  
B. 10.3 inches                      D. 12.3 inches
- \_\_\_\_\_ 15. A class of 50 students is divided into two groups; one group has eight less than the other; how many are in each group?  
A. 21 & 29                      B. 22 & 28                      C. 23 & 27                      D. 24 & 26

**Good work!** Now you are ready to take on some activities on Scientific Notations.

## Lesson

# 1

## Write Numbers in Scientific Notations



### *What's In*

Previously, you have learned how to arrange numbers in increasing and decreasing order. Now, let us check your prior knowledge about it.

#### **Try this!**

Arrange the following set of numbers in increasing and decreasing orders.

1. {3, -4, 0, 6, -2}

Increasing: \_\_\_\_\_

Decreasing: \_\_\_\_\_

2. {2.5, 0.3, -5.25, -0.7, 1.2}

Increasing: \_\_\_\_\_

Decreasing: \_\_\_\_\_

3. {2, 0.8,  $-\sqrt{8}$ , -4.7,  $6\frac{1}{3}$ }

Increasing: \_\_\_\_\_

Decreasing: \_\_\_\_\_

At this time, let us have a review about your past topic about multiplying numbers by powers of 10.

#### **Find each product.**

1.  $0.042 \times 10 =$  \_\_\_\_\_

4.  $1.031 \times 0.1 =$  \_\_\_\_\_

2.  $7.331 \times 100 =$  \_\_\_\_\_

5.  $21.5 \times 0.001 =$  \_\_\_\_\_

3.  $0.125 \times 1000 =$  \_\_\_\_\_



### **Notes to the Teacher**

This module consists of problems about writing/expressing numbers in scientific notations. Please check the student's prior knowledge about rational numbers and powers of 10 since these are pre-requisite concepts of this lesson.



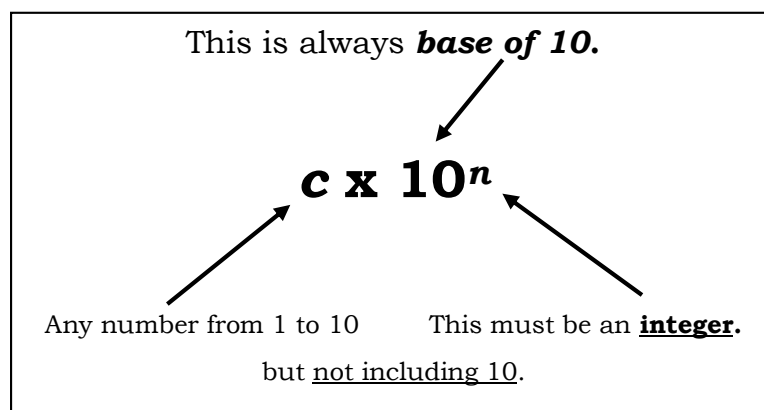
## What's New

In 2007, the total number of mobile telephone subscribers was estimated at 57 300 000, almost 15 times more than the number of fixed-line telephone subscribers which is estimated at 3 900 000. Write the numbers of mobile telephone and fixed-line telephone subscribers in scientific notations.



## What is It

**Scientific notation** simplifies the way we write very large and very small numbers in a compact form. The primary components of a number written in scientific notation are as follows:



So in a nutshell, scientific notation is composed of...

- a **number part** called **coefficient** or "**c**" (a number greater than or equal to 1 but less than 10)
- a number with **base 10** raised to an integer power (**n**).

The following are common numbers written in scientific notation. Try to see if you can find some pattern.

Common name	Decimal form	Power of 10	Scientific Notation
One millionth	0.000001	$10^{-6}$	$1 \times 10^{-6}$
One thousandth	0.001	$10^{-3}$	$1 \times 10^{-3}$
One hundredth	0.01	$10^{-2}$	$1 \times 10^{-2}$
One tenth	0.1	$10^{-1}$	$1 \times 10^{-1}$
One	1	$10^0$	$1 \times 10^0$
Ten	10	$10^1$	$1 \times 10^1$
One hundred	100	$10^2$	$1 \times 10^2$
One thousand	1,000	$10^3$	$1 \times 10^3$
One million	1,000,000	$10^6$	$1 \times 10^6$
One billion	1,000,000,000	$10^9$	$1 \times 10^9$
One trillion	1,000,000,000,000	$10^{12}$	$1 \times 10^{12}$

## A. How to Write Numbers in Scientific Notation

### Steps in Writing Decimal Numbers into Scientific Notation

**STEP 1:** Identify the initial location of the *original decimal* point.

**STEP 2:** Identify the **final location** or “destination” of the original decimal point.

- The **final location** of the *original decimal* point must be directly **to the right of the first nonzero number**.

**STEP 3:** Move the *original decimal* point to its **final location**.

- You will get a number here called “**c**”. Its value **must** be greater than or equal to 1, but less than 10.
- When the decimal is moved *towards the left*, the count for the exponent of base 10 should be *positive*.
- When the decimal is moved *towards the right*, the count for the exponent of base 10 should be *negative*.

**STEP 4:** Write “c” multiplied by some power of base 10. It should look something like this:  $c \times 10^n$

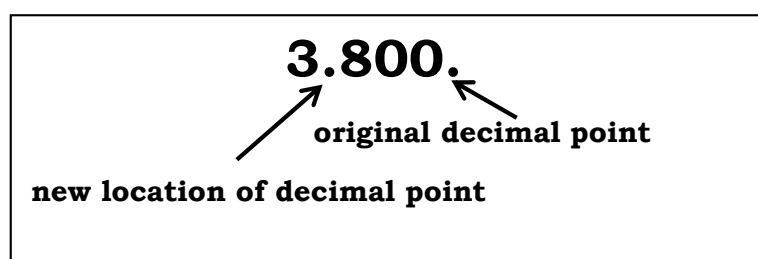
### **Examples of How to Write Decimal Numbers into Scientific Notation (*Positive Power*)**

#### **Example 1:**

Rewrite the given decimal number **3,800** in scientific notation.

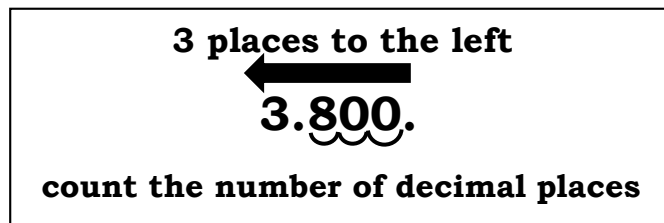
#### **Solution:**

We start by identifying where the original location of the decimal point, and its new location.



Now, we move the decimal point from the starting point to its *final destination* while counting the number of decimal places

- Remember the rule above, if the decimal is moved *towards the left*, the count for the exponent of base 10 is *positive*.



That makes our value of “*c*” as  $c = 3.8$ , and the **power of 10** is **3**. Putting them together in the required format, our final answer is

$$3.8 \times 10^3$$

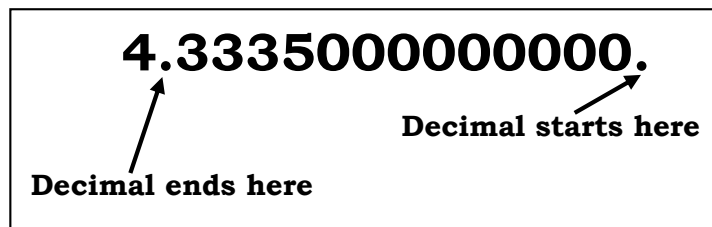
Always remember to make sure that “*c*” value always has the decimal point right after the first digit which is the case here. Great!

**Example 2:**

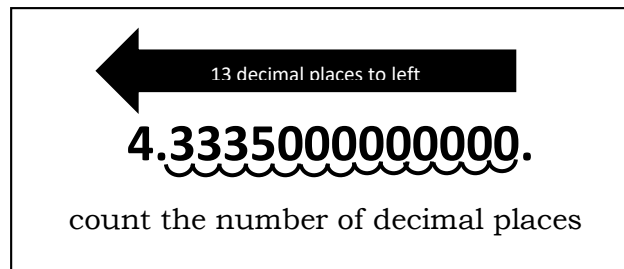
Rewrite the given decimal number **43,335,000,000,000** in scientific notation.

**Solution:**

The starting decimal point is on the far right. We need to move it to the *left* until we have a decimal number between 1 and 10.



Moving the decimal from right to left implies that the power of 10 will have a positive integer.



The value of the coefficient is  $c = 4.3335$ , and the **power of 10** becomes **13**. Therefore, the final answer of our scientific notation is just

$$4.3335 \times 10^{13}$$

## B. Examples of How to Write Decimal Numbers into Scientific Notation (Negative Power)

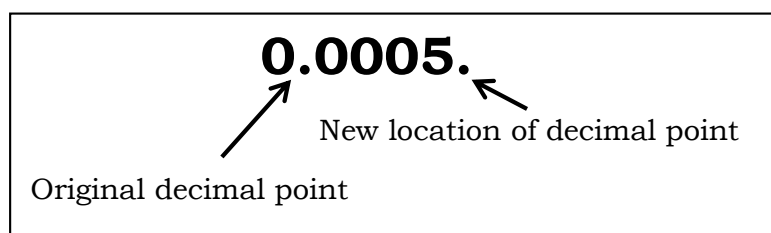
### Example 1:

Rewrite the given decimal number **0.0005** in scientific notation.

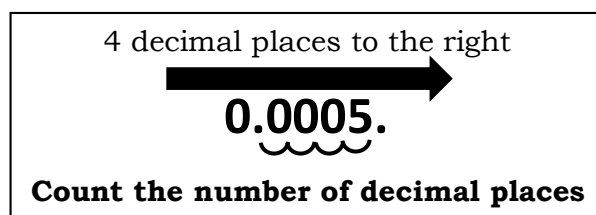
### Solution:

It is obvious that the original decimal point is to the left of the nonzero digit. We will move the decimal going to the *right*. The rule above states that

- When the decimal is moved *towards the right*, the count for the exponent of base 10 should be *negative*.



Moving the decimal point to the right should yield a **negative exponent for the base 10**.



The value for coefficient is  $c = 5$ , and the **power of 10** is **-4**. Our final scientific notation answer should be

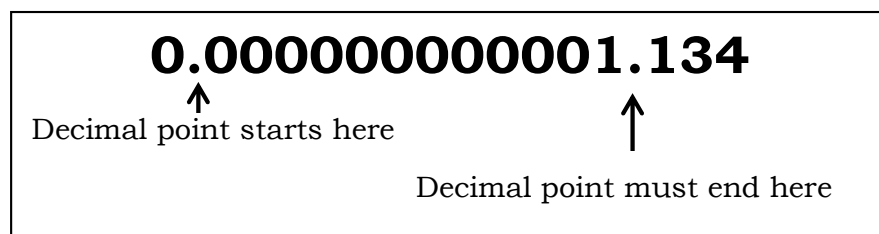
$$5 \times 10^{-4}$$

**Example 2:**

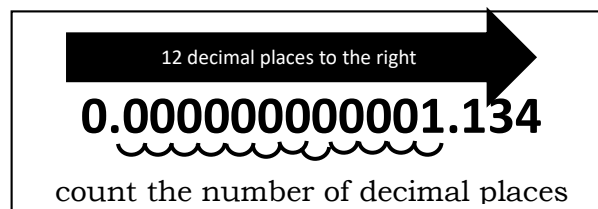
Rewrite the given decimal number **0.000000000001134** in scientific notation.

**Solution:**

The given decimal number is less than 1, so we expect to move the decimal point *towards the right* such that it **stops after the first nonzero digit**.



Let's move the decimal point to the right, and it should accumulate a negative power of 10.



We have a coefficient value of  $c = 1.134$ , and base ten value of  **$10^{-12}$** . This gives us a scientific notation of

$$1.134 \times 10^{-12}$$

That's it, folks! I hope you learn the basics of how to write a decimal number into its scientific notation form.

### C. Convert Scientific Notation to a Standard Notation

#### Example 1:

Convert  $3.456 \times 10^4$  in standard notation

#### Solution:

$$3.456 \times 10^4 = 3.456 \times 10,000 = \mathbf{34560}$$

Or since you're multiplying a power of 10 positive, just move the decimal 4 units to the right

$$3.456 \times 10^4 = \underbrace{3.4560}_{\text{move decimal 4 units right}} = \mathbf{34560}$$

#### Example 2:

Convert  $3.456 \times 10^{-4}$  in standard notation

#### Solution:

$$3.456 \times 10^{-4} = 3.456 \times .0001 = \mathbf{0.0003456}$$

Or since you're multiplying a power of 10 negative, just move the decimal 4 units to the left

$$3.456 \times 10^{-4} = \underbrace{.0003}_{\text{move decimal 4 units left}} 456 = \mathbf{0.0003456}$$

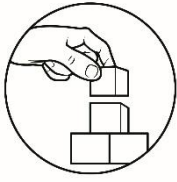
#### Example 3:

A distance of Saturn to the Sun is about  $8.84 \times 10^8$  miles.

#### Solution:

$$8.84 \times 10^8 = 8 \underbrace{84000000}_{\text{move decimal 8 units right}} = \mathbf{884\,000\,000 \text{ miles}}$$





## ***What's More***

A. Write each number in scientific notation:

- 1) 234550 = \_\_\_\_\_
- 2) 6607900 = \_\_\_\_\_
- 3) 0.006 = \_\_\_\_\_
- 4) 0.0012 = \_\_\_\_\_
- 5) 20,000 = \_\_\_\_\_
- 6) 0.00078 = \_\_\_\_\_
- 7) One Hundred Thousand = \_\_\_\_\_
- 8) One Hundred Thousandth = \_\_\_\_\_
- 9) 5 million = \_\_\_\_\_
- 10) 2,900 km = \_\_\_\_\_

B. Write the following numbers in standard notation:

- 11)  $2.34 \times 10^2$  = \_\_\_\_\_
- 12)  $1.06 \times 10^{-3}$  = \_\_\_\_\_
- 13)  $1.567 \times 10^5$  = \_\_\_\_\_
- 14)  $6.002 \times 10^{-4}$  = \_\_\_\_\_
- 15)  $8.79 \times 10$  = \_\_\_\_\_

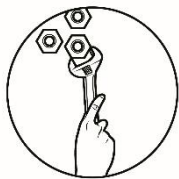


## ***What I Have Learned***

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

compact      coefficient or “c”      base 10  
negative      positive

1. Scientific notation allows us to express a very small or very large number in a \_\_\_\_\_ form.
2. Scientific notation is composed of a number part called \_\_\_\_\_ (a number greater than or equal to 1 but less than 10).
3. Scientific notation is composed of a number with \_\_\_\_\_ raised to an integer power (***n***).
4. When the decimal is moved towards the left, the count for the exponent of base 10 should be \_\_\_\_\_.
5. When the decimal is moved towards the right, the count for the exponent of base 10 should be \_\_\_\_\_.



## ***What I Can Do***

Here is another activity that will let you apply what you have learned about writing numbers in scientific notation by doing the following activities.

1. The speed of light is 186,000 miles per second, or about 671,000,000 miles per hour. How would you express these numbers in scientific notation?
2. The speed of sound depends on the type of medium and the temperature of the medium it is traveling through. The speed of sound in dry air at 15° C (59° F) is about 763 miles per hour. Rewrite this number in scientific notation.
3. The radius of a hydrogen atom is  $2.5 \times 10^{-11}$  m. Express this number in standard notation.

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

**Lesson****2****Solving Problems involving  
Real Numbers*****What's In***

Evaluate the following real numbers:

	<b>Answer</b>
1. $\frac{1}{6} + \frac{1}{5}$	
2. $0.5 \div 10$	
3. $\frac{2}{5} + \frac{3}{4}$	
4. $4 \times 1\frac{2}{3}$	
5. $\frac{1}{2} - \frac{1}{3}$	
6. $\left(\frac{4}{9}\right)\left(\frac{9}{2}\right)$	
7. $\frac{3}{7} + \frac{5}{7}$	
8. $-2 + (-2) + [-(10 + 5)]$	
9. the value of $x + y$ if $x = 5$ and $y = 7$	
10. $10^2 + 4^3$	

***Notes to the Teacher***

This module consists of word problems involving real numbers.  
Please check the student's literacy and numeracy level in  
performing activities.



## ***What's New***

A cyclist is traveling 33 kilometers per hour from Koronadal City to Sto. Niño, South Cotabato. How many meters does the cyclist travel in one minute?

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## ***What is It***

This lesson is the culminating part on dealing about real numbers. It combines all the concepts and skills learned in the past lessons on real numbers.

In solving problems involving real numbers, mastery in performing fundamental operations on different properties are needed.

Examples:

1. There are 8 packs of fruit juice in a box. How many boxes needed if 40 people are attending the meeting with each receiving 6 packs of fruit juice?

### **Step 1:**

What are the given? **8 packs of fruit juice in a box, 40 people and each person will be receiving 6 packs**

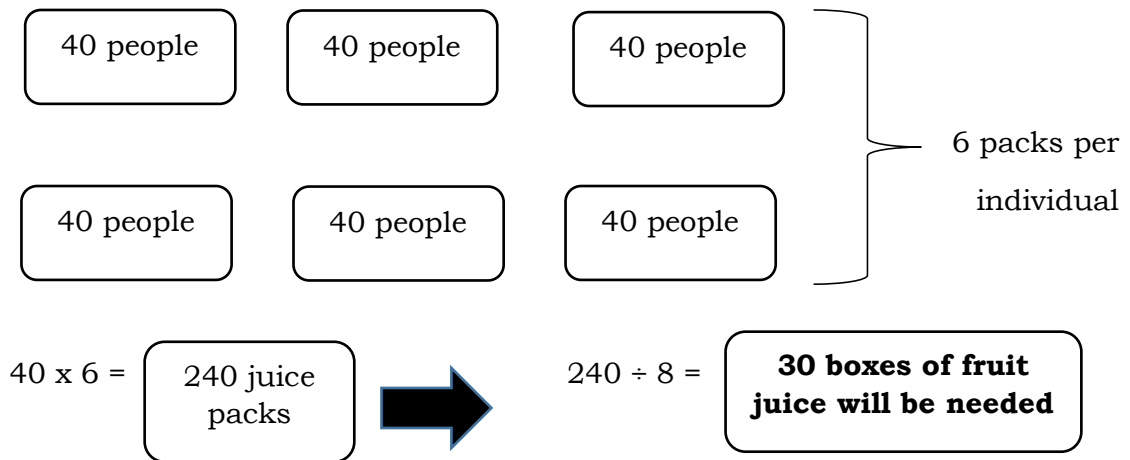
What do I need to find? **Boxes of fruit juice needed**

### **Step 2:**

What is the equation?  **$(40 \times 6) \div 8$**

**Step 3:**

Solve (you may create a visual representation to show your solution)



2. Lucas can paint the fence in 40 minutes while Matthew can paint the same fence in 60 minutes. How long will it take for them to paint the fence together?

**Step 1:**

What are the given? **Lucas can paint the fence in 40 minutes while Matthew can paint on the same fence in 60 minutes**

What do I need to find? **The time Lucas and Matthew can finished the work together**

**Step 2:**

What is the equation?  $\frac{1}{40} + \frac{1}{60} = \frac{1}{x}$

**Step 3:**

Solve.

Assign variables:

Let  $x$  = time to paint the fence

The LCM of 40 and 60 is 120.  $\frac{1}{40} + \frac{1}{60} = \frac{1}{x}$

Multiply both sides with 120  $120 \left( \frac{1}{40} + \frac{1}{60} = \frac{1}{x} \right)$

Distributive property  $\frac{120}{40} + \frac{120}{60} = \frac{120}{x}$

Simplify  $3 + 2 = \frac{120}{x}$

Multiply both sides by x  $5 = \frac{120}{x}$

Divide both sides by 5  $5x = 120$

$$x = 24$$

**Answer: The time taken for both of them to paint the fence together is 24 minutes.**

3. Four years ago, Mark's age was half of the age he will be in 10 years. How old is he now?

**Step 1:**

What are the given?

Mark's age 4 years ago	Mark's age in 10 years	Half of the age he will be in 10 years
$x - 4$	$x + 10$	$\frac{1}{2}(x + 10)$

What do I need to find? **Mark's present age**

**Step 2:**

What is the equation?  $x - 4 = \frac{1}{2}(x + 10)$

**Step 3:**

Solve.

Let  $x$  be Mark's age now. (Look at the question and put the relevant expressions above it)

Equation  $x - 4 = \frac{1}{2}(x + 10)$

Distributive property  $x - 4 = \frac{1}{2}x + 5$

Addition property  $x - \frac{1}{2}x = 5 + 4$

Combine like terms  $\frac{1}{2}x = 9$

Divide both sides by  $\frac{1}{2}$   $x = 18$

**Answer: Mark is now 18 years old.**

4. Zac has 1000 coins in his coin bank consisting of 10-peso coin and 5-peso coin. If the total cash is P5 500. How many of each type of coins are in the coin bank?

**Step 1:**

What are the given? **Zac has 1000 coins in his coin bank consisting of 10-peso coin and 5-peso coin**

What do I need to find? **Number of 10-peso coin and number of 5-peso coin**

**Step 2:**

What is the equation?  **$10(x) + 5(1000 - x) = 5\,500$**

**Step 3:**

Solve.

$$[\text{number value of 10-peso coins}] + [\text{number value of 5-peso coins}] = \text{P5 500}$$

Equation  **$10x + 5(1000 - x) = 5\,500$**

Distributive property  **$10x + 5000 - 5x = 5\,500$**

Addition property  **$10x - 5x = 5\,500 - 5000$**

Combine Like terms/Closure property  **$5x = 500$**

Divide both sides by 5/Cancellation property  **$x = 100$**

**Answer:**

Let x = number of 10 peso coin	1000-x = number of 5 peso coin
<b>x = 100</b>	<b>1000 - 100 = 900</b>
<b>There are 100 10-peso coin</b>	<b>There are 900 5-peso coin</b>

5. On the last Mathematics quiz, Lani answered  $\frac{4}{9}$  of the problems correctly while Mae answered  $\frac{9}{10}$  of the item correctly. If each problem is worth the same amount, who got the higher score?

**Step 1:**

What are the given? ***Lani answered  $\frac{4}{9}$  of the problems correctly while Mae answered  $\frac{9}{10}$  of the item correctly***

What do I need to find? **A student who got the higher score.**

**Step 2:**



What is the equation?

<b>Lani</b>	$\frac{4}{9}$
<b>Mae</b>	$\frac{9}{10}$

**Step 3:**

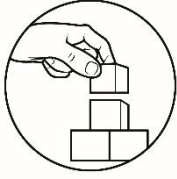
Solve.

Cross multiply

Simplify

<b>Lani</b>	<b>Mae</b>
$\frac{4}{9}$	$\frac{9}{10}$
4 (10)	9 (9)
40 < 81	

Answer: ***Mae got the higher score than Lani.***



## ***What's More***

Solve.

1. Lucio has 100 coins, all in 5 and 1 peso coins, amounting to Php180.00. How many 1 peso coins does he have?
2. On their previous exam, Rhea answered  $\frac{5}{8}$  on the questions correctly and Precious answered  $\frac{7}{11}$  of it correctly. If each problem is worth the same amount, who got the higher score?
3. It takes Jendy nine hours to pick fifty boxes of mangoes. Joy can pick the same amount in 11 hours. How long would it take them if they worked together? (in hours)



## ***What I Have Learned***

Fill in the blanks. Supply the missing terms in solving problem.

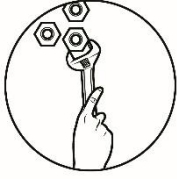
1. Alex is thrice as old as David. Four years ago, he was 4 times as old as David. How old are they now?

Let Alex =  $a$

David =  $d$

	<b>4 years ago</b>	<b>Present age</b>
Alex	$3d - 4$	?
David	$4(d - 4)$	?

1. \_\_\_\_\_  $3d - 4 = 4(d - 4)$
2. \_\_\_\_\_  $3d - 4 = 4d - 16$
3. \_\_\_\_\_  $3d - 4d = -16 + 4$
4. \_\_\_\_\_  $-d = 12$
5. \_\_\_\_\_  $d = 12$



## ***What I Can Do***

Read the situations carefully and answer is being asked. Show your solutions.

1. It takes Ellen 4 hours to paint one room. If Sam helps, it takes them 2 hours. How long would it take for Sam to paint one room alone?
  
  
  
  
  
  
  
  
  
  
2. Grace wants to buy a television worth 17, 800 pesos. If she buys it using her credit card, she needs to pay 2, 222 pesos for 9 months. How much more is the price of the television when purchased on credit card than in cash?

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



I. Read each item carefully and choose the letter of the correct answer. Write your answer on the space before the number.

- 27

into scientific notation?

- A. 0.00089                      B. 800009                      C. -8000                      D. 89

\_\_\_\_\_ 10. In the given expression  $7.03 \times 10^{-2}$ , which of the following is the coefficient or the number part?

- A. 7                      B. 7.03                      C. -2                      D. 10

\_\_\_\_\_ 11. Christine spent P2,100 for shoes. This was P700 less than twice what she spent for a blouse. How much was the blouse?

- A. P1,000                      B. P1,200                      C. P1,400                      D. P1,600

\_\_\_\_\_ 12. A class of 50 students is divided into two groups; one group has eight less than the other; how many are in each group?

- A. 21 & 29                      B. 22 & 28                      C. 23 & 27                      D. 24 & 26

\_\_\_\_\_ 13. Today, Berto's age (B) is 4 times Carlo's age. In 4 years, what will Charlie's age be in terms of B?

- A.  $4B+4$                       B.  $4(B+4)$                       C.  $\frac{B}{4} + 4$                       D.  $\frac{B+4}{4}$

\_\_\_\_\_ 14. An ant moves forward 21.2 inches in one hour. It turns around and crawls 15.3 inches in the next hour. Finally, in the third hour, it turns around again and crawls 6.4 more inches. How much forward progress does the ant make in 3 hours?

- A. 9.3 inches                      C. 11.3 inches  
B. 10.3 inches                      D. 12.3 inches

\_\_\_\_\_ 15. In his first month at school, Dave saved P128.00. At the next month at school, Dave saved P152.00. Then, he donated P105.00 of his savings. How much money does Jim have left now?

- A. P155.00                      B. P165.00                      C. P175.00                      D. 185.00



## ***Additional Activities***

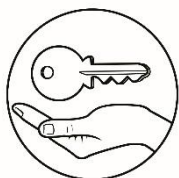
## Think About This!

A. Explain how to write each number in scientific notation.

1. 0.0000000081
2. 945 000 000 000

B. Word Problems.

1. Grade 7 - Ruby is having an election to decide whether they will go on an educational tour. They will have an educational tour if more than 50% of the class will vote **YES**. Assume that every member of the class will vote. If 24% of the girls and 18% of the boys will vote **YES**, will the class go on the educational tour? Explain
2. Two students are vying to represent their school in the national chess competition. Mara won 10 of the 15 games she played this year, while Clara won 6 of the 10 games she played this year. If you were the principal of the school, which student would you choose? Explain



***Answer Key***

<p><b>What I Can Do</b> <i>(Lesson 1)</i></p> <ol style="list-style-type: none"> <li>1. <math>1.86 \times 10^5</math> miles per second and <math>6.71 \times 10^8</math> miles per hour</li> <li>2. <math>7.63 \times 10^2</math> miles per hour</li> <li>3. 0.0000000000025</li> </ol>	<p><b>What I Have Learned (Lesson 1)</b></p> <ol style="list-style-type: none"> <li>1. compact</li> <li>2. coefficient or "c"</li> <li>3. base 10</li> <li>4. negative</li> <li>5. positive</li> </ol>	<p><b>Assessment</b></p> <ol style="list-style-type: none"> <li>1. A</li> <li>2. C</li> <li>3. B</li> <li>4. C</li> <li>5. B</li> <li>6. C</li> <li>7. D</li> <li>8. D</li> <li>9. A</li> <li>10. B</li> <li>11. C</li> <li>12. A</li> <li>13. C</li> <li>14. D</li> <li>15. C</li> </ol>
<p><b>What I Know</b></p> <ol style="list-style-type: none"> <li>1. C</li> <li>2. B</li> <li>3. C</li> <li>4. A</li> <li>5. C</li> <li>6. B</li> <li>7. A</li> <li>8. B</li> <li>9. D</li> <li>10. A</li> <li>11. C</li> <li>12. C</li> <li>13. C</li> <li>14. D</li> <li>15. A</li> </ol>	<p><b>What's More (Lesson 1)</b></p> <p>A.</p> <ol style="list-style-type: none"> <li>1) <math>2.3455 \times 10^5</math></li> <li>2) <math>6.6079 \times 10^6</math></li> <li>3) <math>6 \times 10^{-3}</math></li> <li>4) <math>1.2 \times 10^{-3}</math></li> <li>5) <math>2 \times 10^4</math></li> <li>6) <math>7.8 \times 10^{-4}</math></li> <li>7) <math>1 \times 10^5</math></li> <li>8) <math>1 \times 10^{-5}</math></li> <li>9) <math>5 \times 10^6</math></li> <li>10) <math>2.9 \times 10^3</math></li> </ol> <p>B.</p> <ol style="list-style-type: none"> <li>11) 234</li> <li>12) 0.00106</li> <li>13) 156700</li> <li>14) 0.0006002</li> <li>15) 87.9</li> </ol>	



### What I can Do (Lesson 2)

1. 44 and 45
2. 4 hours
3. 2, 198 pesos

### What's More (Lesson 2)

1. There are 80 1-peso coin
2. Precious
3. 4.95 hours

### What I have Learned (Lesson 2)

	4 years ago	
Alex	$3d - 4$	36
David	$4(d - 4)$	12

1. Equation
2. Distributive property
3. Addition property
4. Combine like terms/Closure Property
5. Divide both sides by -1/Cancellation Property

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