



Activity of remedial teaching 1  
Topic: Basic Knowledge about “Set”,  
Writing Sets, Kinds of Sets



Direction for students

1. Time : 3 hours.
2. Students are given the following things:
  - 2.1 Content card is divided into 2 parts.
    - Content card no. 1: Basic Knowledge about set , Writing Sets.
    - Content card no. 2: Kinds of sets
  - 2.2 Activity 1 : Basic Knowledge about “Set”, Writing Sets.
    - Direction card no. 1 : Basic Knowledge about “Set”, Writing “Sets”.
    - Activity card no. 1: Basic Knowledge about “Set”, Writing “Sets”.
    - Answer key for activity card no. 1 : Basic Knowledge about “Set”, Writing “Sets”.
    - Conclusion: Basic Knowledge about “Set”, Writing “Sets”
  - 2.3 Activity 2 : Kinds of set .
    - Direction card no. 2 : Kinds of set.
    - Activity card no. 2 : Kinds of set.
    - Answer key for activity card no. 2: Kinds of set.
    - Conclusion 2: Kinds of set.

3. Learning Objective: When students finish the lesson, they will be able to ;

3.1 Tell the meaning of “Set” and find elements of “Set”.

3.2 Write the elements set and postulate set for each elements of “Set”

3.3 When defining any set up. The student can tell that. A set in a finite infinite or sets empty.

3.4 Students are able to use the group dynamics.

3.5 Students have desired behaviors for public consciousness.

4. Activities for students :

4.1 Study student’s handbook, Direction card, Activity card, Content card.

4.2 Do the given activities in the activity card.

4.3 Each group search knowledge, discussion, and write a summary.

4.4 Answer questions in the activity card.

4.5 Write a summary about Basic knowledge about “Set”, writing “set”, and kinds of “Set”.

4.6 Complete post – test ; Basic knowledge about “Set”, writing “set”, and kinds of “Set”.

5. Assessment: Students complete the given activities. The teacher will evaluate by student’s behavior of working in group, the group dynamic, answering questions, presentation , and doing the test.



## Pretest no. 1

Subject : Fundamental Mathematics Code: M 31101

Class : Mathayom Suksa 4

Topic : Basic knowledge about “Set”, “ Writing Set” Time : 15 minutes

**Directions :** 1. This test is multiple choice. There are 4 items to choose from. (There are 10 items, 1 point for each items. The total score are 10 points.)

2. Choose only one correct answer.

1. Which is the symbol of “set”?

- |            |            |
|------------|------------|
| a. (     ) | b. {     } |
| c. [     ] | d. ...     |

2. “ $\in$ ” is the symbol of “set”?

- |                  |                             |
|------------------|-----------------------------|
| a. Name of “set” | b. Element of “set”         |
| c. Kind of “set” | d. Characteristics of “set” |

3. Which set is equal to  $\{ 2, 3, 5, 7 \}$ ?

- |  |   |
|--|---|
| a. Set of odd numbers                      | b. Set of the numbers that is more than 2 |
| c. Set of the positive integer more than 1 | d. Set of prime number between 0 to 9     |

4.  $\pm$  Belong in which of the following sets?

- |  |  |
|--|--|
| a. Set of squared 1.                         | b. Set of the number which is not equal to 0.        |
| c. Set of the integer squared is equal to 1. | d. Set of the integer which is not equal to 1 or -1. |

5. Which item is not the tabular form?

a.  $\{1, 2, 3\}$

b.  $\{2, 4, 6, \dots\}$

c.  $\{a, b, c, \dots, z\}$

d.  $\{x \mid x \in \mathbb{I}\}$

6. If  $A = \{1, 3, 5, 7\}$  which item is set of A?

a.  $A = \{x \mid x \text{ is the integers}\}$

b.  $A = \{x \mid x \text{ is the odd integers}\}$

c.  $A = \{x \mid x \text{ is the positive integers from 1 to 7}\}$

d.  $A = \{x \mid x \text{ is the integers that is less than 7}\}$

7. If  $R = \{1, 2, 3, 4, 5, \dots\}$ , how can you write set R builder form like which item?

a.  $R = \{x \mid x \text{ is } \in \mathbb{I}\}$

b.  $R = \{x \mid x \in \mathbb{I}^+\}$

c.  $R = \{x \mid x = 1, 2, 3, 4, 5\}$

d.  $R = \{x \mid x \in \mathbb{I}^-\}$

8. If  $D = \{\dots, -2, -1, 0, 1, 2, \dots\}$ , how can you write set D builder form like which item?

a.  $D = \{x \mid x \in \mathbb{I}\}$

b.  $D = \{x \mid x \in \mathbb{I}^+\}$

c.  $D = \{x \mid x \in \mathbb{I}^-\}$

d.  $D = \{x \mid x \in \mathbb{N}\}$

9. If  $A = \{1, 2, 3, 4, 12, 34\}$ , How many elements of sets A?

a. 8

b. 6

c. 4

d. 2

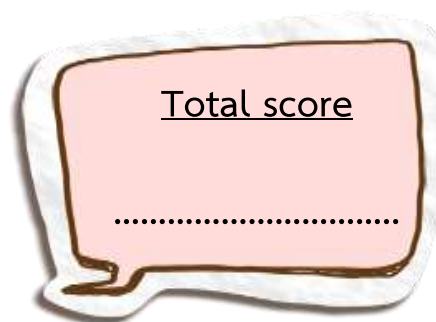
10. If  $A = \{a, b, c\}$ , Which item is incorrect?

a.  $A \in a$

b.  $b \in A$

c.  $d \notin A$

d. A has 3 elements



Answer key for pretest no. 1

Topic : Basic Knowledge about “sets” “writing sets”



Item	Answer key	Item	Answer key
1	b	6	c
2	b	7	b
3	d	8	a
4	c	9	b
5	d	10	a



## Direction card no.1

Subject: Fundamental Mathematics Code M 31101

Class : Mathayom suksa 4

Topic: Basic knowledge about “sets” , “writing sets” Time: 90 minutes

## Learning Objectives :



1. Tell the meaning of “sets” and find element of “sets”.
2. Write the elements set and postulate set for each elements of “Set”.

## Do the activities as following:



1. Student do the pretest no. 1 ; Basic knowledge about “sets” , “writing sets”
2. Students work in groups of 4 – 5 each groups is compose of smart, medium, and slow learning. Each groups selects their head, committee, and secretary for doing all activities together.
3. The representative of each takes equipment as follow :
  - Circle buttons; 4 red, 2 white , 3 green.
  - Square buttons; 4 red, 2 white 3 green.
  - 1 piece of paper.
  - 1 bottle of glue.
  - 1 box of magic.

4. Each group to complete the following activities: put the button they think. Then students present opinion by writing on the paper provided. The representative presents in front of the class.

5. Students in each group study the content card no. 1; Basic knowledge about “sets” , “writing sets”. The teacher gives them suggestion and answers their questions closely.

6. Each representative from each group present their job in front of the class and the teacher asks them questions.

- Do you think your job which is created by your group is set or not? Give reasons.

- Answer guideline: It is the set because it shows a group of things.

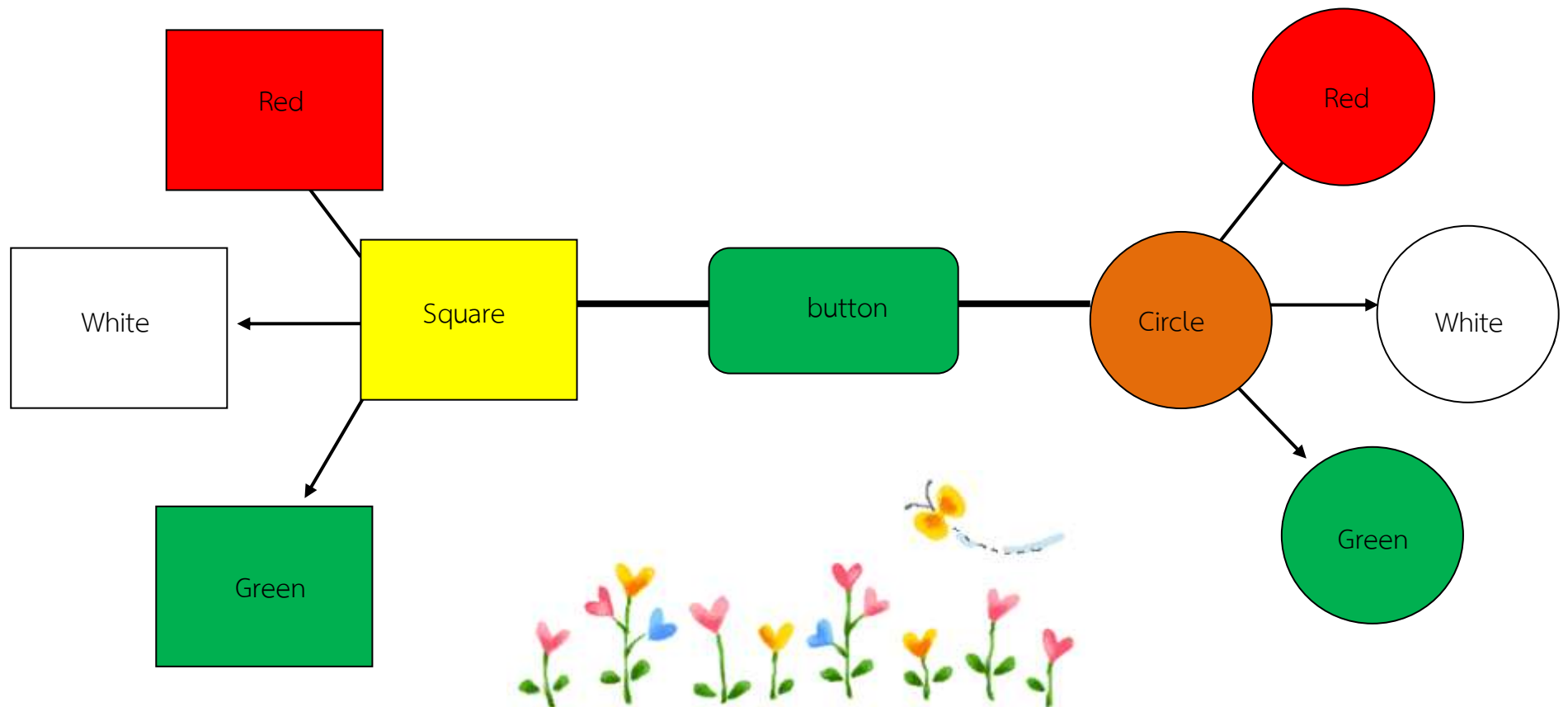
7. Students discussion and summarize the content they have learned. They summarize in the given paper and share with friends in the group.

8. Students do the activity card no.1 Basic knowledge about “sets” , “writing sets”. When they finish, the teacher gives them the answer key for activity card no. 2 They change with friends in their group and correct it. They help each other to read the answer for all items. They write a list of the score.

9. Student do the posttest no. 1 ; Basic knowledge about “sets” , “writing sets”



Answer clue directions of activity no. 1; “Basic knowledge about set” , “white sets”





### Content card no. 1

Topic: Basic Knowledge about “sets” , “writing set



#### 1. Meaning of “sets”



Set is the mathematics word that means no definition, but it is used to definite groups of things. When we talk about groups of something, we can know which thing belongs to which group.

Examples ;

Set of English vowels which means a group of a , e , i , o and u .

Set of numbers less than 10 means a group of numbers 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 and 9 things which are inside the “set” called elements.

#### 2. Writing set



##### 2.1 writing set; Tabular form

By writing all elements in the sign bracket; { } and use comma ( , ) between each element as follows;

Set of numbers less than 7 , we can write as follow ;

{ 1 , 2 , 3 , 4 , 5 , 6 }

Set of the five first Thai alphabet characters, we can write as follow ;

{ ก , ข , ฃ , ค , ศ }

Set of even number from 2 to 10, we can write as follow ;

{ 2 , 4 , 6 , 8 , 10 }

## 2.2 Writing set; Builder Form

Write the variant of set's element. Then which can explain in several styles as follow;

$$A = \{ 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10 , ..... \}$$

$$A = \{x \mid x \text{ is the positive integers} \}$$

We read it; set of  $x$  that is positive integers.

$$A = \{x \mid x \text{ are numerals} \}$$

We read; “ set of  $x$  such that  $x$  is an even counting number.

Sign “ $\mid$ ” is used in instead of the word “By”

Writing set; Tabular form, we use three point for showing that there are more elements in that set. It is usually known that what are elements in that set, such as  $\{ 1 , 2 , 3 \dots , 10 \}$ . The symbol,...means there are 4 , 5 , 6 , 7 , 8 and 9 which are the elements of this set.  $\{ \text{Monday, Tuesday, Wednesday, ...Sunday} \}$ . The symbol...show that there are Thursday, Friday, and Saturday.

## 3. The symbol of set



Writing set, normally we write the set with capital letters such as  $A$  ,  $B$  ,  $C$  and we write its elements with the letter such as  $a$  ,  $b$  ,  $c$ . For example;  $A = \{ 1 , 4 , 9 , 16 , 25 , 36 \}$ . This means  $A$  is the set of the square of the first six numbers.



#### 4. Elements of set



Use “ $\in$ ” instead of the word , “ elements” or “in” such as

$A = \{ 1 , 2 , 3 , 4\}$ . It show that ;

1 is the elements of A or it’s in “A”. We can write,  $1 \in A$

3 is the element of A or it’s in A. We can write  $3 \in A$ .

The word “ not the element” or “ not in”, We use the symbol, “ $\notin$ ”.

Such as

5 “ is not the element of A” or “ not in A”. We use the symbol

“ $5 \notin A$ ”

7 is “ not the element of A” or “ not in A”. We use the symbol,

$7 \notin A$

For set A which has 4 elements, we use  $n(A)$  to tell how many elements of set A. The symbol is  $n(A) = 4$

**Example 1 : Write the following set; Tabular form.**



1. Set of provinces in Thailand ending with the word “ Buri”.

**Method :**

A is the set of provinces in Thailand ending with the word “Buri”

∴  $A = \{ \text{Suphanburi, Praieenburi, Singburi, Lopburi, Chonburi, Saraburi, Rachaburi, Kanjanaburi, Nonthaburi, Petchburi, Juntaburi} \}$



2. Set of negative integers.

**Method :**

If B is the set of negative integers.

$$\therefore B = \{ -1, -2, -3, \dots \}$$

3. Set of all consonants in Thai language.

**Method :**

C is the set of all Thai consonants.

$$\therefore C = \{ ก, ข, ค, \dots, ฮ \}$$

**Example 2 : Write the following set; Builder form.**



1.  $A = \{ 2, 4, 6, 8, 10 \}$

**Method :**

$A = \{ x \mid x \text{ are the even number that are lower than } 12 \}.$

$A = \{ x \mid x \text{ are the numbers that are divisible by 2 and they are between 1 and 11} \}.$

2.  $B = \{ 1, 3, 5, 7 \}$

**Method :**

$B = \{ x \mid x \text{ are the positive odd numbers that are lower than } 9 \}.$

$B = \{ x \mid x \text{ are odd numbers that are higher than } -1 \text{ and lower than } 9 \}.$



### 5. Agreement about set.



1. Writing set in tabular form, we write the set's elements only once. For example; the set of digits within 2 3 2 are {2,3}.

2. Set of numbers that are often seen and used. They are as follows;

I is the set of integers or  $I = \{..., -2, -1, 0, 1, 2, ...\}$ .

$I^+$  is the set of positive integers or  $I^+ = \{1, 2, 3, ...\}$ .

$I^-$  is the set of negative integers or  $I^- = \{-1, -2, -3, ...\}$ .

N is the set number or  $N = \{1, 2, 3, ...\}$ .

P is the set of prime number or  $P = \{2, 3, 5, 7, ...\}$ .

R is the set of real number.





### Activity card no. 1

Topic : Basic knowledge about “Set”, “ Writing set”


Group.....

Member :

1.....2.....

3.....4.....

**Direction :** Fill in your answer for the following blanks. (There are 10 items, 1 point for each item. The total score are 10 points.)

Question	Answers
1. Write the tabular of the following set;	
1.1 Set of positive integers that can be divisible by 5.	1.1..... .....
1.2 Set of provinces in Thailand with end with the word . “ Tha-ni”.	1.2..... .....
1.3 Set of even numbers that are lower than 20	1.3..... .....
1.4 Set of integers that can be divisible by 3 and are between 5 and 15	1.4..... .....

Question	Answer
<p>2. Write the following ; Builder form.</p> <p>2.1 <math>A = \{2, 4, 6, 8, 10\}</math></p> <p>2.2 <math>B = \{1, 3, 5, \dots, 99\}</math></p> <p>2.3 <math>C = \{1, 2, 3, \dots\}</math></p> <p>2.4 <math>D = \{1, 4, 9, 16, \dots\}</math></p>	<p>2.1 <math>A = \dots\dots\dots</math></p> <p>2.2 <math>B = \dots\dots\dots</math></p> <p>2.3 <math>C = \dots\dots\dots</math></p> <p>2.4 <math>D = \dots\dots\dots</math></p>
<p>3. Write how many elements of the following sets.</p> <p>3.1 <math>A = \{2148\}</math></p> <p>3.2 <math>B = \{x \mid x \text{ are the positive integers between 20 and 30}\}.</math></p>	<p>3.1 <math>n(A) = \dots\dots\dots</math></p> <p>3.2 <math>n(B) = \dots\dots\dots</math></p>

Total score

.....





**Answer key for activity card no.1**  
**Topic : Basic knowledge about “Set”, “Writing set”**

1) Write the tabular of the following set.

1.1  $\{5, 10, 15, \dots\}$

1.2  $\{\text{Surattani, Patumtani, Udonrtani, Ubonrachtani, U- thaitani}\}$

1.3  $\{2, 4, 6, \dots, 18\}$

1.4  $\{6, 9, 12\}$

2. Write the following ; Builder form

2.1  $A = \{x \mid x \text{ are the positive even numbers that are lower than } 12\}$

2.2  $B = \{x \mid x \text{ is add numbers that are lower than } 100\}$

2.3  $C = \{x \mid x \text{ is the set of positive integers}\}$

2.4  $D = \{x \mid x \text{ is the square of numeral}\}$

\*Answers may very; depending on the teacher’s decision.


3. Write how many elements of the following sets.

3.1  $n(A) = 1$

3.2  $n(B) = 9$








**Posttest no. 1**

**Subject : Fundamental Mathematics    Code : M 33101**

**Class : Mathayomsuksa 4**

**Topic : Basic knowledge about “Set”, Writing Set” Time : 20 minutes**



**Directions :** 1. This test is multiple choice there are 4 items to choose from. (There are 10 items, 1 point for each item.  
The total score are 10 points)  
2. Choose only one correct answer.

1. In writ set, each of its elements. What symbol do we use to separate elements?

- |      |        |
|------|--------|
| a. , | b. ( ) |
| c. ; | d. ... |

2. Which of the following set has 4 elements?

- |   |  |
|---|--|
| a. Set of the consonants of the word, “น่ารัก”. | b. Set of the consonants of the word, “ พรรณ”.   |
| c. Set of the consonants of the word, “บอบบาง”. | d. Set of the consonants of the word, “ เทศกาล”. |

3. Which number is not factor 20?

- |      |       |
|------|-------|
| a. 2 | b. 4  |
| c. 5 | d. 12 |

4. If A is the set of the consonants of the word “SEVEN”. How can we write set A in “ Tabular Form”

- |              |                |
|--------------|----------------|
| a. {SEVEN}   | b. {S E V N}   |
| c. {S,E,V,N} | d. {S,E,V,E,N} |

5. If  $B = \{ x \mid x \text{ is the English vowel} \}$ , What kind of writing set is it?

- a. Tabular Form
- b. Descriptive Form
- c. Not Tubular Form
- d. Builder Form

6. If  $S = \{ x \mid x \text{ is the integer and } -3 < X \leq 0 \}$ , write set in tabular form as follows;

- a.  $S = \{-3, 0\}$
- b.  $S = \{-2, -1\}$
- c.  $S = \{-2, -1, 0\}$
- d.  $S = \{-3, -2, -1, 0\}$

7. If  $H = \{ x \mid x \text{ is the even number between 1 and 10} \}$

Which item is mean “Set H”?

- a.  $\{ 2, 4, 6, 8 \}$
- b.  $\{ 2, 4, 6, 8, 10 \}$
- c.  $\{ 2, 4, 6, 8, \dots \}$
- d.  $1, 2, 3, \dots, 10 \}$

8. If  $A = \{ x \mid x \text{ is the number that are divisible by 3} \}$ , write set A in

Tabular Form as follows;

- a.  $\{ 3, 6, 9 \}$
- b.  $\{ 6, 9, 12 \}$
- c.  $\{ 3, 6, 9, \dots \}$
- d.  $\{ 6, 9, 12, \dots \}$

9. If  $P = \{ 2, 4, 6, \dots, 16 \}$  which item is all element of P?

- a.  $2, 4, 6, 16$
- b.  $8, 10, 12, 14$
- c.  $2, 4, 6, 8, 10, 12, 14, 16$
- d.  $1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16$

10. If  $8 \notin B$ , which of the following sets are related to the given?

- a.  $B = \{ 8 \}$
- b.  $B = \{ 8, 9, 10 \}$
- c.  $B = \{ x \mid x < 8 \}$
- d.  $B = \{ x \mid 6 < x < 10 \}$



### Answer key for posttest no.1

Subject : Fundamental Mathematics Code : M 33101

Class : Mathayomsuksa 4

Topic : Basic knowledge about “Set”, “ Writing Set” Time : 20 minutes



Item	Answer key	Item	Answer key
1	a	6	c
2	d	7	a
3	d	8	c
4	d	9	c
5	d	10	c



## Pretest no. 2

Subject : Fundamental Mathematics Code : M 33101

Class : Mathayomsuksa 4

Topic : Kinds of set Time : 15 minutes

**Directions :** 1. This test is filling gaps. (There are 10 items. 1 point for each item. The total score are 10 points.)

2. Students fill in the answer for each blank.

1. Tell the elements for the following set and give reasons.

1)  $A = \{3, 34, 345, 5678\}$

$n(A) = \dots\dots\dots$

2)  $B = \{x \mid x \in \mathbb{R} \text{ and } 1 \leq x \leq 2\}$

$n(B) = \dots\dots\dots$

3)  $C = \{x \mid x \in \mathbb{I} \text{ and } 10 \leq x \leq 15\}$

$n(C) = \dots\dots\dots$

4)  $D = \{x \mid x \in \mathbb{I} \text{ and } x^2 = x\}$

$n(D) = \dots\dots\dots$

5)  $E = \{x \mid x \in \mathbb{I} \text{ and } x^2 = x + x\}$

$n(E) = \dots\dots\dots$



2. Decide which is “Finite set”, “Empty Set”, “ Infinite Set”, than give reasons.

1)  $A = \{1, 2, 3, \dots, 100\}$

.....

2)  $B = \{x \mid x \in \mathbb{I} \text{ and } X \geq 10\}$

.....

3)  $C = \{x \mid x \in \mathbb{R} \text{ and } 2 \leq X \leq 5\}$

.....

4)  $D = \{x \mid x \in \mathbb{N} \text{ and } X + 2 = X\}$

.....

5)  $E = \{x \mid x \in \mathbb{N} \text{ and } X^2 = X + X\}$

.....



Answer for pretest no. 2

Subject : Fundamental Math Code : M 33101

Class : Mathayomsuksa 4

Topic : Kinds of set Time : 15 minutes

**Direction :** 1. This test is filling gaps. (There are 10 items. 1 point for each item. The total score are 10 points.)

2. Students fill in the answer for each blank.

1. Tell the elements for the following set and give reasons.

1)  $n(A) = 4$

2)  $n(B)$ , there are plenty of number that cannot tell the exact number.

because B is the set of the real number  $\therefore B = \{ 1, \dots, 2 \}$

3)  $n(C) = 6$   $\therefore C = \{ 10, 11, 12, 13, 14, 15 \}$

4)  $n(D) = 2$   $\therefore D = \{ 0, 1 \}$

5)  $n(E) = 2$   $\therefore E = \{ 0, 2 \}$

2. Decide which is “Finite set”, “Empty Set”, “ Infinite Set”, than give reasons.

1) Finite set because  $n(A) = 100$

2) Infinite set because there are plenty of number that cannot tell the exact number.  $\therefore B = \{ 10, 11, 12, \dots \}$

3) Infinite set because there are plenty of number that cannot tell the exact number. because C is the set of real number  $\therefore B = \{ 2, \dots, 5 \}$

4) Empty set because  $n(D) = 0$  from  $X + 2 = X$  that  $X - X = -2$

So  $0 = -2$  that has no answer

5) Finite set because  $n(E) = 1$   $\therefore E = \{ 0 \}$

## Direction card no. 2

Subject : Fundamental Math Code : M 33101

Class : Mathayomsuksa 4

Topic : Kinds of set Time : 90 minutes

## Learning objectives;



From a list of sets students can identify; finite set, empty set, or infinite set.

## Do the activities as follows;



1. Students do the pretest no.2 ; Kind of set.
2. Students work in groups of 4 – 5 each groups is compose of smart, medium, and slow learning. Each groups selects their head, committee, and secretary for doing all activities together.
3. Each group sends the representative to get the 3 card which includes “ countable”, “ uncountable and no elements.
4. The teacher shows 10 examples of sets on the blackboard. The student in each group shows their answer. Then check the answers together, write the scores. When the teacher finishes 10 items, count the score for each group. Give prairie to the group that gets the highest score.

Example of sets :  $A = \{ x \mid x^2 < 0 \}$

$$B = \{ x \mid 2x^2 + 3 = X - 3 \}$$

$C = \{ x \mid x \text{ is provinces in Thailand that begins with "จ"} \}$

$$D = \{ 0, 2, 4, \dots, 10 \}$$

$$E = \{ x \in \mathbf{I}^+ \mid X < 5 \}$$

$F = \{ x \mid x \text{ is the consonants of the word "เซตว่าง"} \}$

$$G = \{ x \mid x \text{ is the positive integers and } X \geq 7 \}$$

$H = \{ x \mid x \text{ is the prime number that are higher than 5} \}$

$$I = \{ 3, 7, 11, 15, \dots \}$$

$$J = \{ 2, 3 \}$$

5. Students in each group study the content card no. 2; Kind of set. The teacher gives them suggestion and answers their questions closely.

6. Students discussion and summarize the content they have learned. They summarize in the given paper and share with friends in the group.

7. Students do the activity card no.2 Kind of set. When they finish, the teacher gives them the answer key for activity card no. 2. They change with friends in their group and correct it. They help each other to read the answer for all items. They write a list of the score.

8. Students do the posttest no.2 ; Kind of set.







Content card no.2  
Topic : Kinds of set



1. “Kind of set” Set including finite set and infinite set.



1.1 Finite sets

Definition : Finite set is the set that its elements are positive integers or Zero.

Definition : “Empty set” Empty set is the set with no elements. The symbol of empty set is  $\{\}$  or  $\emptyset$ . The symbol “ $\emptyset$ ” is Greek which we can read “phi”

Examples of finite sets :

$$A = \{ 0, 2, 4, \dots, 10 \}, n(A) = 6$$

$$B = \{ x \in \mathbb{I}^+ \mid x < 5 \}, n(B) = 4$$

$$C = \{ x \mid x \text{ is the consonants of the word “เซตว่าง”} \}, n(C) = 4$$

Examples of finite set which is empty set :

$$A = \{ x \mid x^2 < 0 \}$$

$$B = \{ x \mid x \in \mathbb{R}; 2x^2 + 3 = x - 3 \}$$

$$C = \{ x \mid x \text{ are provinces in Thailand that begin with the letter “ค”} \}$$

1.2 Infinite Sets

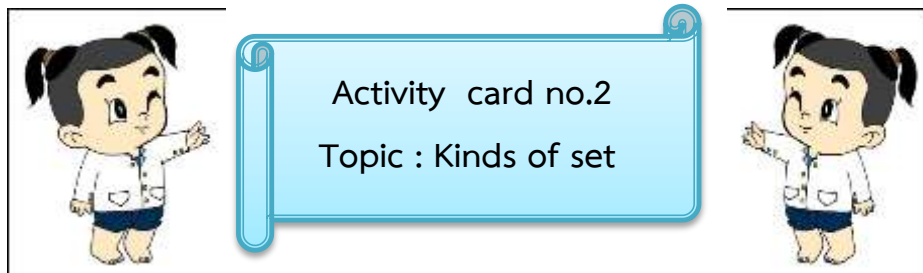
Definition : Infinite set is the set that is not the finite set.

Examples of Infinite set ;

$$A = \{ x \mid x \text{ is the positive integer and } x \geq 7 \}$$

$$B = \{ x \mid x \text{ is the prime number that is higher than 5} \}$$

$$C = \{ 3, 7, 11, 15, \dots \}$$



Decide which of the following; Finite set, Empty set, or Infinite set.

Then, decide if set “A”, set “B” are equal or not. Tick in the blanks.

(There are 10 items, 1 point for each item. The total score are 10 points.)

set	Answer		
	Empty set	Finite set	Infinite set
1. $A = \{ 1, 2, 3, 4 \}$			
2. $B = \{ 2, 4, 5 \}$			
3. $A = \{ 2, 4, 6, 8, 10 \}$			
4. $B = \{ x \mid x \text{ the numeral that is lower than } 1 \}$			
5. $A = \{ 2, 4, 6, 4, 2 \}$			
6. $B = \{ 4, 2, 2, 6, 6 \}$			
7. $A = \{ 1, 2, 3 \}$			
8. $B = \{ x \mid x \geq 2 \}$			
9. $A = \{ x \in \mathbb{R} \mid x^2 = 11 \}$			
10. $B = \{ x \in \mathbb{I} \mid x^2 < 0 \}$			



Total score

.....



### Answer key for activity card no.2

#### Topic: Kinds of set



Decide which of the following; Finite set, Empty set, or Infinite set.

Then, decide if set "A", set "B" are equal or not. Tick in the blanks.

(There are 10 items, 1 point for each item. The total score are 10 points.)

set	Answer		
	Empty set	Finite set	Infinite set
1. $A = \{ 1, 2, 3, 4 \}$		✓	
2. $B = \{ 2, 4, 5 \}$		✓	
3. $A = \{ 2, 4, 6, 8, 10 \}$		✓	
4. $B = \{ x \mid x \text{ the numeral that is lower than } 1 \}$	✓	✓	
5. $A = \{ 2, 4, 6, 4, 2 \}$		✓	
6. $B = \{ 4, 2, 2, 6, 6 \}$		✓	
7. $A = \{ 1, 2, 3 \}$			✓
8. $B = \{ x \mid x \geq 2 \}$			✓
9. $A = \{ x \in \mathbb{R} \mid x^2 = 11 \}$ Can get $A = \{ 1, -1 \}$		✓	
10. $B = \{ x \in \mathbb{I} \mid x^2 < 0 \}$	✓	✓	



## Posttest no. 2

Subject : Fundamental Mathematics Code : M 33101

Class : Mathayomsuksa 4

Topic : Kinds of sets

Time : 20 minutes

**Directions :** 1. This test is multiple choice there are 4 items to choose from. (There are 10 items, 1 point for each item.

The total score are 10 points.)

2. Choose only one correct answer.

1. Which item is infinite set?

- |   |  |
|---|--|
| a. Set of numerals that are lower than 100. | b. Set of numerals that are higher than 100. |
| c. Set of numerals from 1 to 100.           | d. Set of numerals from 0 to 1.              |

2. If  $A = \{4, 8, 12, 16\}$  which item is set A?

- |  |  |
|--|--|
| a. Set of positive integers that are lower than 20, which can be divisible by 4. | b. Set of positive integer which can be divisible by 4 |
| c. Set of positive integers that are lower than 16, which can be divisible by 4. | d. None of the above.                                  |

3. Which item is finite set?

- |   |   |
|---|---|
| a. Set of integer that are higher than 3.   | b. Set of numerals that are higher than 10. |
| c. Set of numerals that are higher than 4 . | d. $\{ 1, 2, 3, \dots, 100 \}$              |

4. Which item is empty set?

- |   |   |
|---|---|
| a. Set of number between<br>-1 to 1                   | b. Set of positive integer that are<br>higher than 2 but are lower<br>than 4. |
| c. Set of negative integers that is<br>higher than 1. | d. Set of real number between<br>10 and 11.                                   |

5. Which item is set of  $\{x \mid x + 5 = 5\}$ ?

- |               |                      |
|---------------|----------------------|
| a. $\{ \}$    | b. $\{ 0 \}$         |
| c. $\{ 10 \}$ | d. $\{ \emptyset \}$ |

6. Which item is incorrect?

- |  |                                       |
|--|---------------------------------------|
| a. Empty set is finite set.                                      | b. $\{ 0 \}$ is empty set.            |
| c. $\{ 1, \{ 1 \}, \{ \{ 1 \} \}, \dots \}$ are infinite<br>set. | d. $\{ \{ \{ \} \} \}$ is finite set. |

7. If  $A = \{1, 2, 3\}$ , consider that which item is set A?

- |                  |                    |
|------------------|--------------------|
| a. $\{3, 1, 1\}$ | b. $\{ 3, 2, 2 \}$ |
| c. $\{ 2, 1 \}$  | d. $\{ 2, 1, 3 \}$ |

8. If

$A = \{x \mid x \text{ replace the consonants of the word "กรรมการ"}\}$

$B = \{x \mid x \text{ replace the consonants of the word "มรรคา"}\}$

$C = \{x \mid x \text{ replace the consonants of the word "มกราคม"}\}$

$D = \{x \mid x \text{ replace the consonants of  
the word "รากไม้"}\}$

Which of the following pairs, sets are equal?

- |            |            |
|------------|------------|
| a. $A = B$ | b. $A = C$ |
| c. $D = A$ | d. $B = D$ |

9. Which item is incorrect?

a.  $\{1, 2, 3, 4\} = \{4, 3, 2, 1\}$

b.  $\{\emptyset\} = \emptyset$

c.  $\{2, 3\} = \{2, 3, 2, 2, 3\}$

d.  $\{2, 3, 4, 5\} \neq \{2345\}$

10. Consider that which item is incorrect?

a.  $A = \{1, 2, 3, 4\}$

b. Two sets are equal to each other, When two sets have the same elements.

$B = \{1, 4, 3, 2\}$  So  $A = B$ .

c.  $A = \{\emptyset\}$  and  $B = \{\{\emptyset\}\}$

d.  $A = \{3, 5, 7\}$   $B = \{7, 3, 5\}$

so  $A = B$ .

then  $A = B$ .



Total score

.....



Answer key for posttest no. 2

Subject : Fundamental Mathematics Code : M 33101

Class : Mathayomsuksa 4

Topic : Kinds of sets

Time : 20 minutes

Item	Answer key
------	------------

- |     |   |
|-----|---|
| 1.  | b |
| 2.  | a |
| 3.  | d |
| 4.  | c |
| 5.  | b |
| 6.  | b |
| 7.  | d |
| 8.  | c |
| 9.  | b |
| 10. | c |



### Conclusion

Topic : Basic knowledge about “ Set”, “ Writing set”, “ Kinds of set”

Name-surname.....Class.....No.....

**Direction :** Write a summary about “Set” as the following;



1. “Set” means

.....

.....

.....

2. There are 2 kinds of “Write set” as follows;

2.1.....

.....

2.2.....

.....

3. “Empty set” means

.....

.....

4. “finite set” means

.....

.....

5. “Infinite set” means

.....

.....



### Conclusion Guideline

Topic : Basic knowledge about “ Set”, “ writing set”, “Kinds of set”

**Direction :** Write a summary about “ Set” as following;



1. Set means the word to indicate a group of thing. When we tell about the group of things, we can know which one is in the group and which one is not.
2. There are 2 kinds of writing set as follows;
  - 2.1 By writing all of its elements in the parenthesis and use comma (,) between each element.
  - 2.2 Write the variant instead of the set's element. Then describe its attribute which can describe in many ways. The symbol “|” is instead of “by”
3. Empty set means the set no elements. Its symbol is {} or  $\emptyset$  .  $\emptyset$  is a Greek symbol. We read it “Phi”
4. Finite set means a set which elements are numbers or zero Infinite set means a set that doesn't have finite set.
5. Infinite set means a set that doesn't have finite set.

