# Worksheet 1.1

## 1.Write the following in the set-tabular form

1) A set of countries in Asean

……..

2) set of a Natural numbers multiple of 4

……..

3 ) Provinces set of names that begin with the letter " ก "

……..

4) The set of positive even number less than 10

……..

5) The set of integer number greater than 100

……..

6) The set of negative integer greater than -100

……..

7) { x/x is a integer greater than 3 and less than 10}

……..

8) { x/x is a integer between 0 and 1}

……..

9) The set of positive integers with double digits.

……..

10) The set of negative integer greater than 5

……..

11 ) $\{x/\ x = n^2\ , n\ is\ a\ integer\ numbers\ between -4\ \ and\ 4\ \}$

……..

12 ) { x/x is a prime number and even number}

……..

13) $\{x/\ x \in N\quad , and\ x^2 - 2x - 8 = 0\ \}$

……..

14) $\{x/\ x\quad , n\ is\ a\ integer\ numbers\ and\ 2\ \leq x \leq 11\ \}$

……..

15) $\{x/\ x\quad , n\ is\ a\ integer\ numbers\ bigin\ 3\ to\ 11\}$

……..

# Worksheet 1.2

1.Write the following in the set-builder form

1) N={2,4,6,…}

……..

2) P = {…,-2,-1,0,1,2,…}

……..

3) R ={2,3,5,7,11,…}

……..

4) T={1,3,5,7,...,15}

……..

5) T={ Monday,Tuesday, Wednesday,Thursday, Friday,Saturday,Sunday}

……..

6) X = {1,2,3,…}

……..

7) M ={-10,-9,-8,…,-1}

……..

## Worksheet 1.3

1. What is the number of element in the following set

1) B = {1234} ……..

2) C = {a,b,c,de,f,gh,ijk}……..

3) D = {x/x is a positive number between 10 and 20}……..

4) G = {x/x is a positive number less than 0} ……..

**5 )** R = {-6,-3,0,3,6} ……..

**6 )** R = {{{0}},{1}} …….

**7)** $U = \{x/\ x \quad , n\ is\ a\ integer\ numbers\ and\ 5 \leq x \leq 10\}$. **……..**

**8 )** I = {x/x is the positive even number less than 12} ……..

**9)** F = {-1,-2,-3,…,-99} ……..

**10 )** H = {3,6,9} ……..

**11 )** R = {{{v}}} …….

**12)** $G = \emptyset$ **……..**

**13)** I = {x/x =5n , n is a Natural number less than 20} ……..

**14)** F = {50,51,52,…,67} ……..

**15 )** W = $\{\emptyset\}$……

# Worksheet 1.4

**1.Which of the following are finite or infinite set?**

1) {x/x is a even integer numbers} …….

2. {1,12,123,1234} ……..

3)$\{x/x = \frac{1}{n}$ ,n is natural number$\}$ ……..

4)$\{x/x = \frac{1}{n}$ ,n is natural number less than 999$\}$ ……..

5) {x/x is a integer multiple of 3} ……..

6) {x/x is a integer multiple of 3 and less than 200} ……

7) {1,2,3,…,100} ……..

8) $\{x/x \in R \; and \; x^2 < 0\}$ ……

**2)Which of the following are empty sets?**

1) A={x/x is a positive integer between 3 and 4} ……

2) C= {x/x is a integer greater than 1 but less than 2} ……

3) M= {x/x is a prime number greater than 3 but less than 10} ……

4) N = { x/x is a integer between 0 and 1}……

**5) R=**$\{x/\; x \in N \quad , and \; x^2 - 2x + 8 = 0\}$ ……

# Worksheet 1.5

**1. Which of the following represent a pair of equal**

1) $E = (7,14,21,\ldots,343\}$

$F = \{x/x = 7n$ , n is a natural number less than50$\}$……

2) $A = \{x/x = 1 - \frac{1}{n}, n \text{ is a natural number}\}$

$B = \{0, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \ldots\}$ ……

4) A= {1,2,3,4,5}

B= {5,4,3,2,1} ……

5) C = {0,1,3,7}

D = {x/x is a integer number less than10} ……

6) E ={12,14,16,18}

F ={14,16,12,18} ……

7) K= {x/x is a even integer number less than 10}

L = { 2,4,6,8 } ……

8) $M = \{x/x \text{ is a Integer and } x^2 = 36\}$

N = { 6} ……

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# Worksheet 1.6

1. Each of the following is True (T) or False (F)

..... 1) Empty set is finite

..... 2) $a \in \{\{a\}, b\}$

..... 3) $2.8 \in \{x \in R/2 < x < 4\}$

..... 4) $\emptyset \in \emptyset$

..... 5) $7 \in \{1,2,3,4, \ldots ,10\}$

..... 6) $\{a, b\} \in \{a, \{b\}, \{a, b\}\}$

..... 7) $\emptyset \in \{\emptyset\}$

..... 8) $A = \{\{1,2,3,4\}\}$ ) so that $n(A) = 1$

..... 9) $\{0\} \in \emptyset$

..... 10) $B = \{1,2,3,4\}$ so that $n(B) = 4$

..... 11) $A = \{1,2,3,4\}$ $and$ $B = \{1,2,3,4\}$ so that $A = B$

..... 12) $A = \{\sqrt{4}, \sqrt{9}, \sqrt{16}\}$ $and$ $B = \{\frac{4}{2}, \frac{6}{2}, \frac{8}{2}\}$ so that $A = B$

..... 13) $A = \{1234\}$ $and$ $B = \{4321\}$ so that

A Comparable $B$ ( A เทียบเท่า B)

..... 14) ถ้า A,B เป็นเซตใด ๆ และ A = B แล้วจะได้ว่า

เซต A เทียบเท่าเซต B

..... 15) ถ้า A,B เป็นเซตใด ๆ และ เซต A เทียบเท่าเซต B

แล้วจะได้ว่า A = B

# Worksheet 2.1

1. Given A = {1,2,3,4} Fill in the blank

1.1 Subset of set A from 0 element

……

1.2 Subset of set A subset from one element

……

1.3 Subset of set A from two element

……

1.4 Subset of set A from three element

……

1.5 Subset of set A from four element

……

1.6 Subset of set A from All element

……

1.7 The proper subset of set A

……

1.8 Power set of set A

……

2. Given B = {{0},{1},{1,2}} Fill in the blank

2.1 Subset of set B from 0 element

……

2.2 Subset of set B subset from one element

……

2.3 Subset of set B from two element

……

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2.4 Subset of set B from three element

……

2.5 Subset of set B from All element

……

2.6 The proper subset of set B

……

2.7 Power set of set B

……

3. Given C = {2,5} Fill in the blank

3.1 Subset of set C from 0 element

……

3.2 Subset of set C subset from one element

……

3.3 Subset of set C from two element

……

3.4 Subset of set C from All element

……

3.5 The proper subset of set C

……

3.6 Power set of set C

……

# Worksheet 2.2

1. Given $D = \{\emptyset, \{\emptyset\}\}$ Fill in the blank

1.1 Subset of set D from 0 element

……

1.2 Subset of set D subset from one element

……

1.3 Subset of set D from two element

……

1.4 Subset of set D from All element

……

1.5 The proper subset of set D

……

1.6 Power set of set D

……

**2. Write down all the subset Each of the following**

2.1 {1} .....

2.2 {1,2} .....

**3. Write down Power set Each of the following**

3.1 {5} .....

3.2 {0,1} .....

3.3.{2,3,4} .....

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4. Given A = $\{1,2,3,\}$ Each of the following is True (T) or False (F)

…….. 1) $2 \in A$

…….. 2) $\{2,3\} \in A$

…….. 3) $\{2,3\} \subset A$

…….. 4) $\{3\} \in A$

…….. 5) $\{3\} \subset A$

…….. 6) $\{3,4\} \subset A$

…….. 7) $3 \subset A$

…….. 8) $\{2,3,4\} \subset A$

…….. 9) $\{1,2,3\} \subset A$

…….. 10) $\{1,2,3\} \in P(A)$

…….. 11) $\{1,3\} \subset A$

…….. 12) $\{1,2\} \subset P(A)$

…….. 13) $\emptyset \subset A$

…….. 14) $\emptyset \in A$

…….. 15) $\{2\} \not\subset A$

…….. 16) $\emptyset \in P(A)$

…….. 17) $n(A) = 8$

…….. 18) $\{1\} \in P(A)$

# Worksheet 3.1

1. If A = {1,2,3} and B = {2 , 4 , 5 } Find

1.1 $A \cup B$

……

1.2 $B \cup A$

……

1.3 $A \cap B$

……

1.4 $B \cap A$

……

1.5 $A \cup \phi$

……

1.6 $A \cap \phi$

……

2. If A = {1,3,5,7} , B = {1,2,3,4} and C = {3,5,7,9 } Find

2.1 $A \cup B$

……

2.2 $(A \cup B) \cup C$

……

2.3 $B \cup C$

……

2.4 $A \cap \phi$

……

2.5 $A \cup \phi$

……

2.6 $B \cap C$

……

2.7 $A \cap (B \cap C)$

……

2.8 $A \cup (B \cap C)$

……

……

2.9 $(A \cap B) \cup (C \cap B)$

……

2.10 $(A \cup C) \cap (B \cup C)$

……

2.11 $(A \cup B) \cap C$

……

……

2.12 $(A \cap B) \cap (B \cap C)$

……

……

2.13 $(A \cup B) \cup (B \cup C)$

……

……

2.14 $(A \cap B) \cup$ C

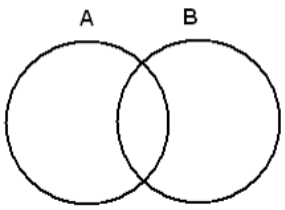
……

……

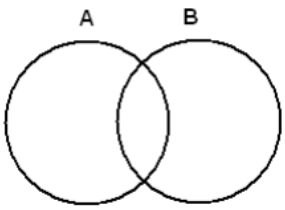
# Worksheet 3.2

1.Shade the following in Venn diagrams:

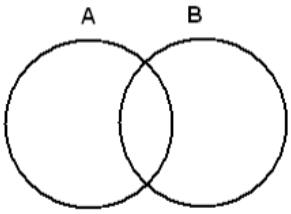
$A \cup B$



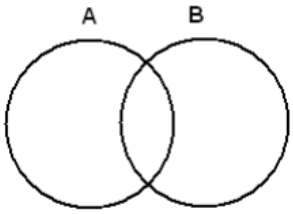

$A \cap B$



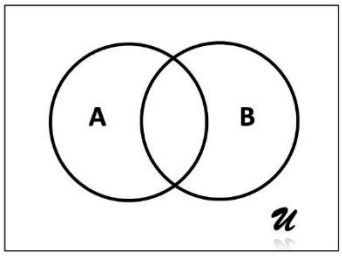

$A - B$



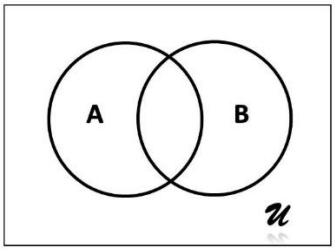

$B - A$




$A'$

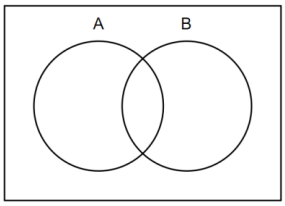


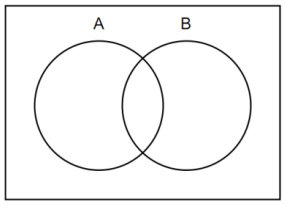

$B'$



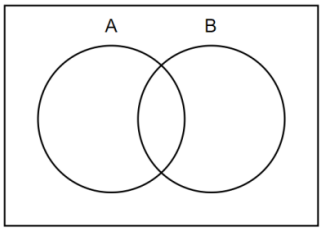
2.Shade the following in Venn diagrams:

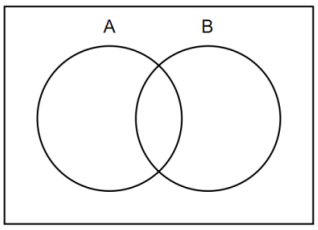
1)$B'$ $B$ $B'$

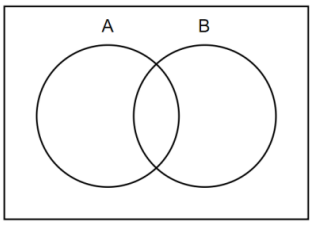


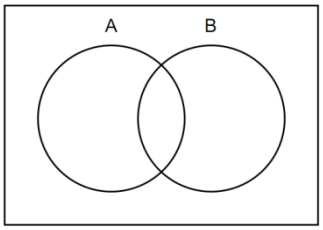

2)$A \cap B'$ A $B'$ $A \cap B'$

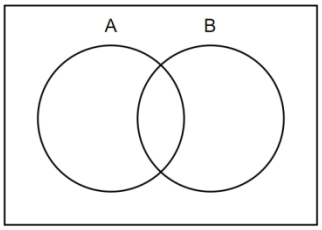


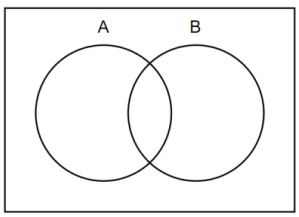



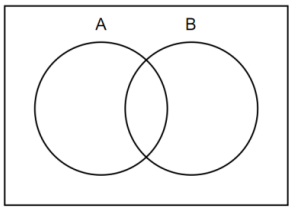

3)$A'$ A $A'$

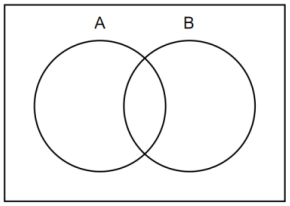


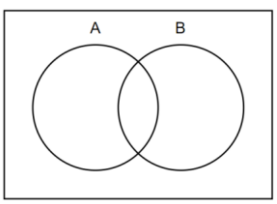

4)$A' \cup B$ $A'$ $B$ $A' \cup B$

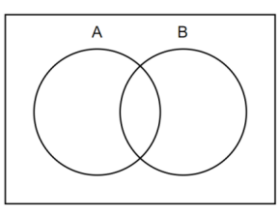


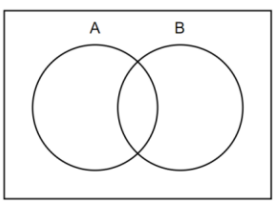




5)$A' \cup B'$ $A'$ $B'$ $A' \cup B'$

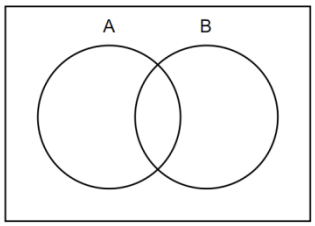


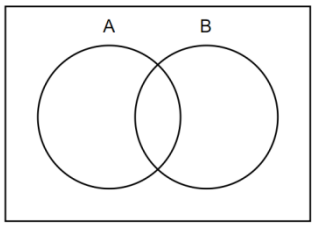



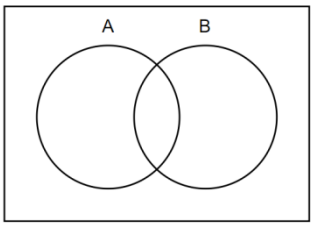
3.Shade the following in Venn diagrams:

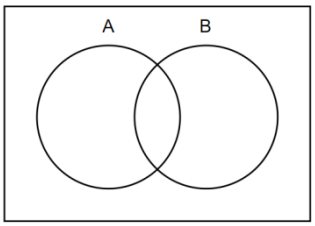
1) $A'$ A $A'$



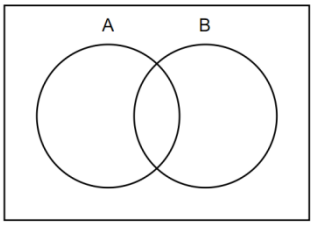



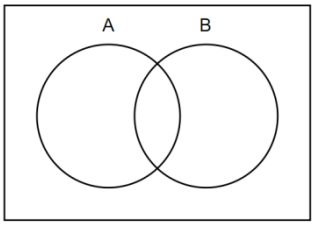

2) $(A \cup B)'$ $(A \cup B)$ $(A \cup B)'$

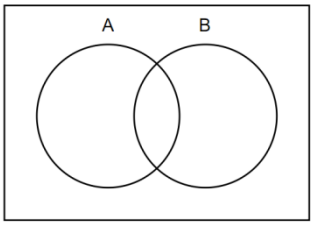


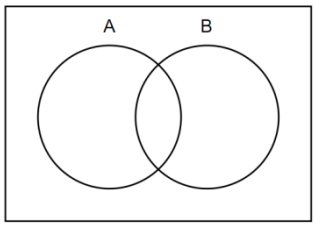

3) $A' \cup B$ $A'$ B $A' \cup B$

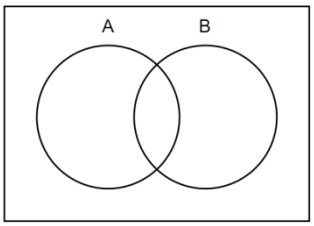


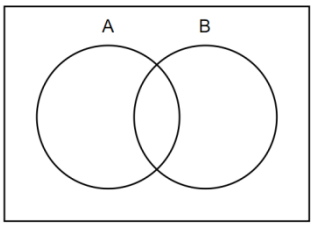




4) $A' \cap B$ $A'$ B $A' \cap B$

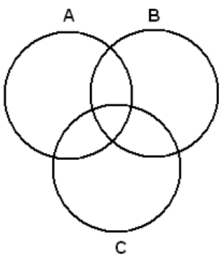


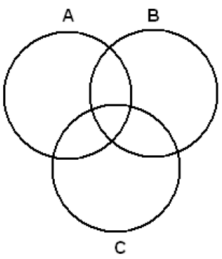



4.Shade the following in Venn diagrams:

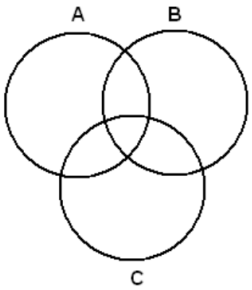
$(A \cup B) \cap C$



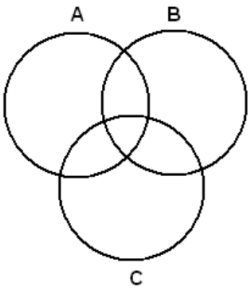

$(A \cap B) \cup (A \cap C)$



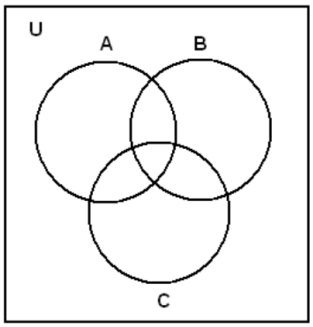

$A \cup (B \cap C)$



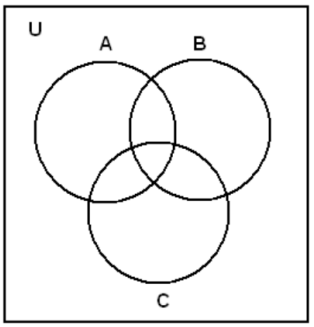

$A - (B \cup C)$



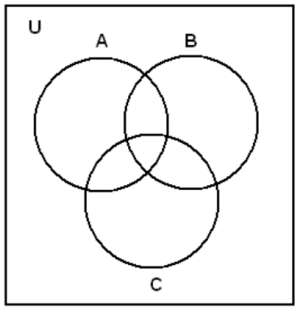

$(A \cup B)' \cap C$



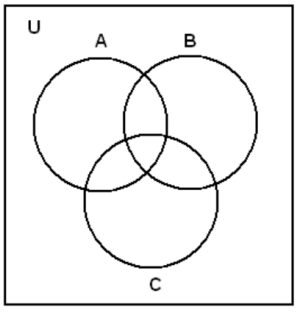

$B' \cap (A \cap C)$



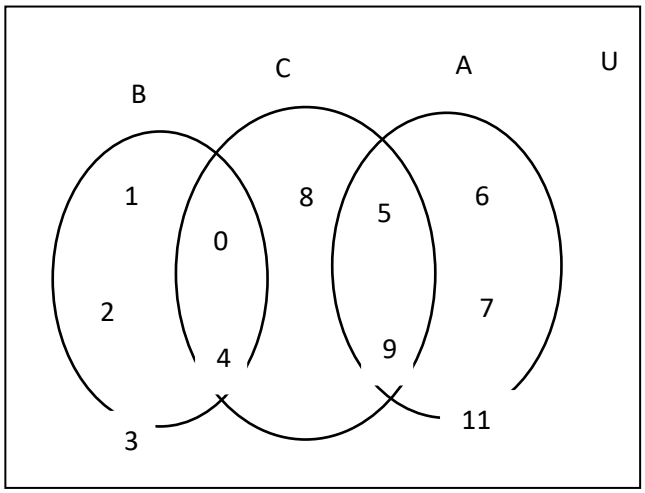

$A' - (B \cup C)$




$(A \cap B) \cup C$



5. Given Venn diagrams Write the following in the set-tabular form




1) U .....

2) A .....

3) B .....

4) C

5) $B \cap A$ .....

6) $B \cap C$ .....

7) $A \cap C$ .....

8) $A \cup (B \cap C)$ .....

9) $(A \cap B) \cup (C \cap B)$ .....

10) $(A \cup C) \cap (B \cup C)$ .....

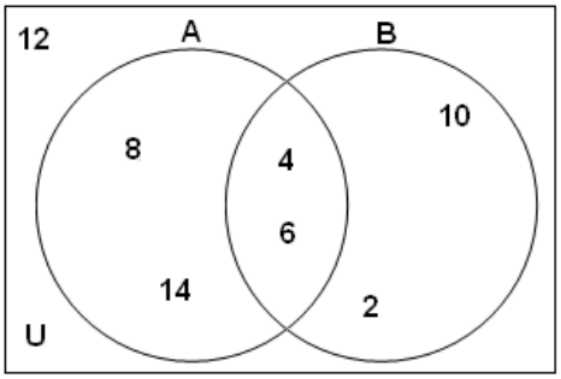
11) $(A \cup B) \cap C$ .....

12) $(A \cap B) \cap (B \cap C)$ .....

13) $(A \cup B) \cup (B \cup C)$ .....

# Worksheet 3.3

**1. Fill in the blanks using Venn diagrams:**

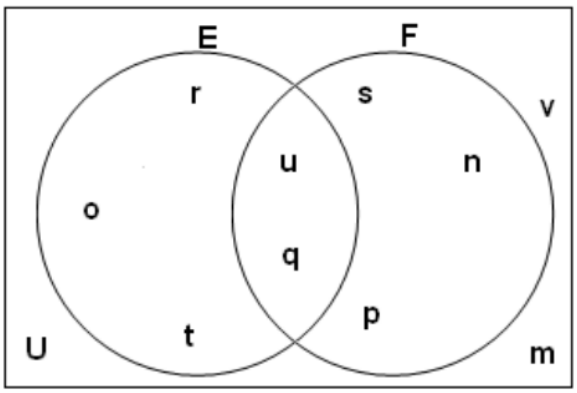



$A \cup B' =$ _____

$A' \cup B =$ _____

$A' \cap B =$ _____

$A \cap B' =$ _____

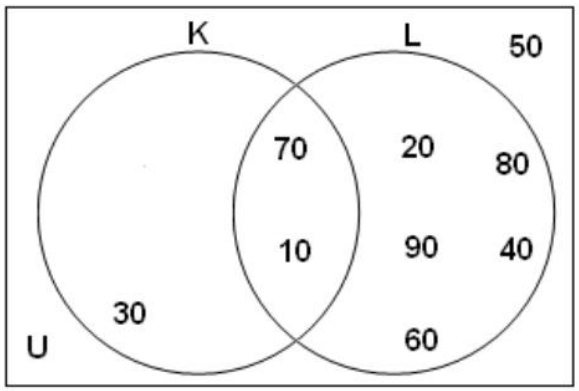



$E' - F =$ _____

$E - F' =$ _____

$E' - F' =$ _____

$F' - E' =$ _____

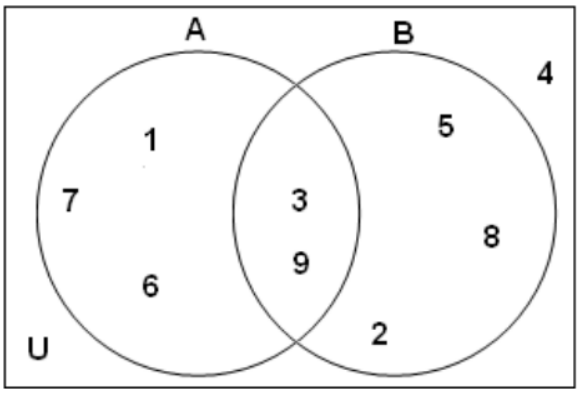



$(K \cup L)' =$ _____

$(K \cap L)' =$ _____

$(K')' \cup L =$ _____

$K \cap (L')' =$ _____

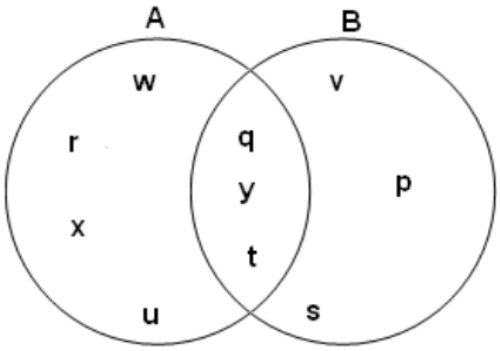



$A' \cup B' =$ _____

$A' \cap B' =$ _____

$(A \cup A)' =$ _____

$(B \cap B)' =$ _____

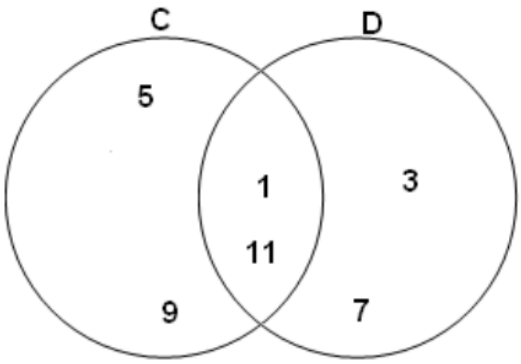



*Elements of A or B* = _____

*Elements of A and B* = _____

*Elements of only A* = _____

*Elements of only B* = _____

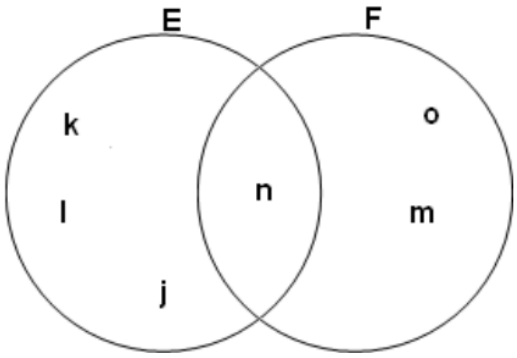



*Elements of C or D* = _____

*Elements of C and D* = _____

*Elements of only C* = _____

*Elements of only D* = _____




*Elements of E or F* = _____

*Elements of E and F* = _____

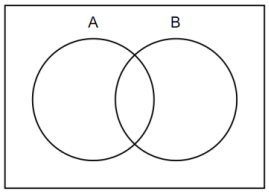
*Elements of only E* = _____

*Elements of only F* = _____

# Worksheet 3.4

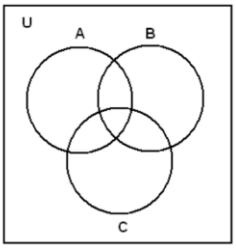
1. In diagram given that n(u)=100 n(A)=40 ,n(B)=25

and $A \cap B = 6$ fill in the boxes




| Set | A – B | B – A | $A \cup B$ | $A'$ | $B'$ | $(A \cup B)'$ |
|---|---|---|---|---|---|---|
| Number of elements | | | | | | |

2.Given number of element in the table




| Set | U | A | B | C | $A \cap B$ | $A \cap C$ | $B \cap C$ | $A \cap B \cap C$ |
|---|---|---|---|---|---|---|---|---|
| Number of elements | 50 | 25 | 20 | 30 | 12 | 15 | 10 | 5 |

Find number of element in the following（Use the formula)

1)$A \cup C$ .....

2)$A \cup B \cup C$ .....

3)$(A \cup B \cup C)'$ .....

4)$B - (A \cup C)$ .....

5)$(A \cap B) - C$ .....

Name.....Class .....No.....KruChaweng

# Worksheet 3.5

1. The inquiry found that Butler There are people who drink tea or coffee is 120 .

There are those who like to drink coffee is 60, like to drink tea is 70 How many guys who like to drink tea .

And coffee

จากการสอบถามพ่อบ้านพบว่า มีผู้ที่ดื่มน้ำชาหรือกาแฟเป็นประจำจำนวน 120 คน

มีผู้ชอบดื่มชา 60 คน ชอบดื่มกาแฟ 70 คน จงหาจำนวนพ่อบ้านที่ชอบดื่มทั้งชา และกาแฟ

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Name.....Class .....No.....KruChaweng

2. Shops , a survey of customers showed that about 60% of the fan .

45 % use desktop fan of ceiling and 15 % use both types to know one customers who are not fans of both species has a few percent.

ร้านค้าแห่งหนึ่งได้ทำการสำรวจความนิยมของลูกค้าเกี่ยวกับการใช้พัดลม พบว่า 60 %

ใช้พัดลมชนิดตั้งโต๊ะ 45 % ใช้ชนิดแขวนเพดาน และ 15 % ใช้ทั้งสองชนิด อยากทราบว่า

1 ) ลูกค้าที่ไม่ใช้พัดลมทั้งสองชนิดนี้มีกี่เปอร์เซ็นต์

2 ) ลูกค้าที่ใช้พัดลมเพียงชนิดเดียวมีกี่เปอร์เซ็นต์

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3. One hospital survey data from patients older than 40 years is 1,000 .

It appears that smokers have lung cancer, 312 men and 660 among 180 people .

Smoking and lung cancer are smokers and I know that lung cancer is the number .

How much and how much per cent of all smokers

โรงพยาบาลแห่งหนึ่งทำการสำรวจข้อมูลจากผู้ป่วยที่มีอายุเกิน 40 ปี จำนวน 1,000 คน

ปรากฏว่า มีคนสูบบุหรี่ 312 คน มีคนเป็นมะเร็งปอด 180 คน และมี660 คน ไม่สูบ

บุหรี่และไม่เป็นมะเร็งที่ปอด อยากทราบว่า มีผู้สูบบุหรี่และเป็นมะเร็งที่ปอดจำนวน

เท่าใด และคิดเป็นร้อยละเท่าใดของจำนวนผู้สูบบุหรี่ทั้งหมด

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