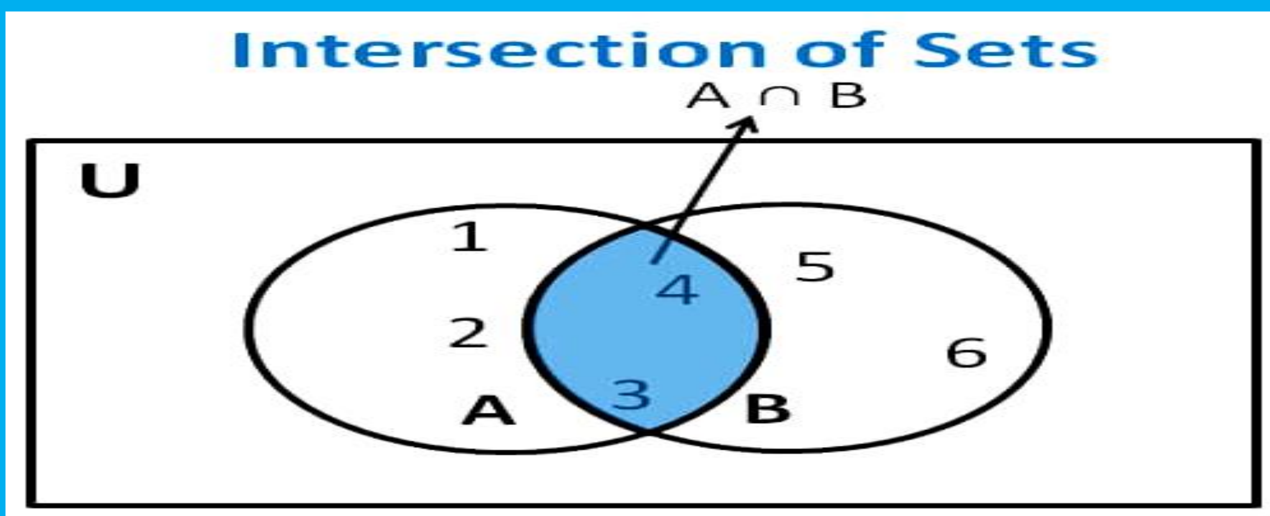
OSEB EDUCATIONAL CONSULT-KAMPALA

2024

MTC

Teachers' Handbook

P.5 LESSON NOTES



TERM 1 2024

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Name:

Class:

STANDARD CURRICULUM

Tel: 0775787978/0742845900

QUALITY WORK

TERM 1 TOPICS

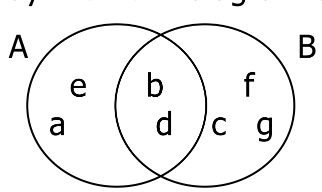
- **SET CONCEPTS**
- **WHOLE NUMBERS**
- **OPERATIONs ON WHOLE NUMBERS**
- **PATTERNS AND SEQUENCES**

WK. 1: Holiday work marking and corrections

TOPIC ONE. SETS

Review of P.4 work on sets (lesson 1,2 and 3)

1. Draw set symbols for:
   a) Subset of
   b) Union set
   c) Intersection set
   d) Null set
   e) Equal set
   f) Non equivalent set
   g) Equivalent set
   h) Non equivalent set.
2. Given that Set A = { 1, 2, 3, 4}
   B = {5, 6, 7, 8}
   C = {1, 3, 4, 2} and
   D = {a, e, I, o, u}
   a) Describe set A
   b) Using symbols show the relationship between sets
      (i) A and C
      (ii) B and C
      (iii) A and D.
3. Draw a Venn diagram and shade the regions below.
   (i) $A \cap B$ (ii) $P \cup Q$ (iii) $F - G$ (iv) $G - F$
4. Study the Venn diagram below and answer the questions that follow.



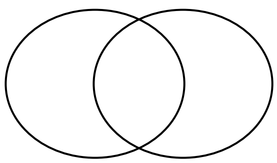
a) Find n(A – B)   b) n(B – A)

c) Write down all members of

i) Set A   ii) Set B   iii) Set $A \cap B$ iv) Find $n(A \cup B)$

5. Given that X = { 0, 1, 2, 3, 4} and Y = { 1, 3, 6, 9, 12}

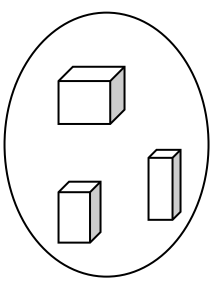
a) Represent the two sets on the Venn diagram.

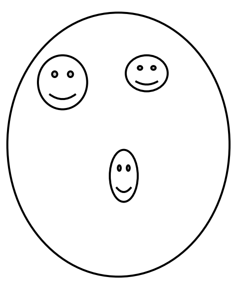


b) From the Venn diagram, find

(i) $X \cap Y$ (ii) $n(X \cup Y)$ (iii) n (Y – X)

Forming sets





Let the learners pick two sets and compare to find out whether they are equal or equivalent sets.

Activity

Forming sets from a big set with emphasis on the numbers.

Using symbols of = or ↔ to describe the sets formed.

Ref; The winner mathematics book 5 page 1

<u>Week 2 lesson 1 and 2</u>

<u>Complement of sets</u>

Complement of a set means a set of members not in the givenset.

OR

Complement of the universal set are elements in the universal set but not in the given set.

EXAMPLE

Given that; p = { 4,3,6,7,9 } and

Q= { 1,2,3,6,7 }

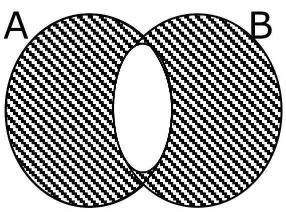
Write down members in p' [complement of set p]

p'= { 1,2,3,5,7 }

a. Find n [pnq]

Note: The symbol for complement of a set

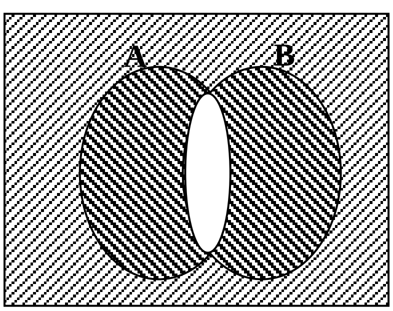
Shading regions for complement of a set



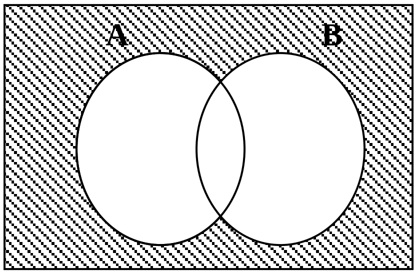
= $(A \cap B)'$

$A \cap B$ the complement

=



Draw and shade (A∪B)’



ACTIVITY

Mk Book 6 page 8 - 15.

WK. 2: Lesson 3

SUBSETS

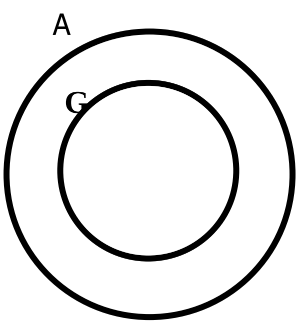
A subset is a small set got from a big set.

The bigger set from which a subset is got is called a Universal set or Super set.

The symbol for a subset is $\subset$

The symbol for not a subset is $\not\subset$ The symbol for Universal set is ξ.

1. Draw a Venn diagram to show that all goats (G) are Animals (A)



2. Given that set Q = {a, b, c} List down all the subsets in set Q }.

{a}, {b}, {c}

{a,b},{a,c}, {b,c}

{}, {a, b, c} $\Longrightarrow$ Subsets $\Longrightarrow$ 8 in number.

N.B The empty set and the set itself (universal) are subsets of every set.

3. By calculating, find the number of subsets in set K if K = {7, 5, 3}

No. of subsets = 2^n where n represents the number of elements in the given set.

∴ Set K has 3 elements

∴ n (c) = 2^n

= 2^3

= 2 x 2 x 2

= 4 x 2

<u>**= 8 subsets**</u>

<u>**Ref: Mk. Bk 7 Pg 2**</u>

<u>**WK2: Lesson 4 & 5**</u>

<u>**APPLICATION OF SETS**</u>

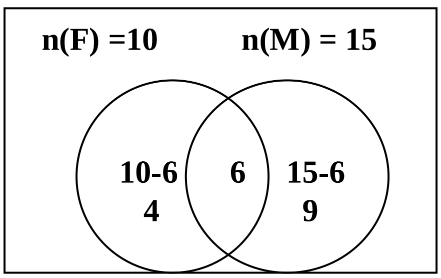
In a class of pupils, 15 eat fish (F) 10 eat meat (m) and 6 eat both fish and meat

n (F) = 15

n (m) = 10

n (F $\cap$ m) = 6

a) Represent the above information on a Venn diagram.



b) How many pupils eat only fish?

10 - 6

<u>**4 pupils**</u>

c) How many pupils eat only meat?

15 – 6

<u>**19 pupils**</u>

d) How many pupils are in that class?

(10 + 6) + 6 + (15 – 6)

4 + 6 + 9

10 + 9

<u>**= 19 pupils**</u>

e) How many pupils like only one type of food?

Fish only + meat only

(10 – 6) + 15 – 6

4 + 9

<u>**= 13 pupils**</u>

2. Given that n (A) = 15 n (B) = 25 n ($A \cap B$) = 5

a) Represent the above information on a Venn diagram

REF: Mk book 6 pg 23-25

<u>WK. 3: Lesson 1</u>

<u>Tossing a coin</u>

A coin has 2 faces ahead and a tail. When it is tossed, the probability of a head or a tail showing up is a half. (Mk bk. 5 & functional Bk. 5)

<u>Tossing a dice</u>

A dice has 6 faces. The probability of getting one of the faces showing up is a sixth.

<u>More about probability</u>

Example.

1) What is the probability of picking a ripe mango, if there are 4 ripe mangoes and 6 rotten mangoes in a basket?
2) Probability about days of the week and months of the year.

TOPIC: WHOLE NUMBERS

Review:

- Forming numerals from digits

<u>WK. 3: Lesson 2</u>

<u>PLACE VALUES AND VALUES OF WHOLES</u>

Reviewing place values up to millions.

6 1 4 2 0 8 7

Ones

Tens

Hundreds

Thousands

Ten thousands

Hundred thousands

Millions

Give the value of each digit in 4123456.

NUMBER	DIGIT	PLACE VALUE	VALUE
6,142,572	6	MILLIONS	6 X 1,000,000 = 6,000,000
	1	HUNDRED THOUSANDS	1 X 100,000 = 100,000
	4	TEN THOUSANDS	4 X 10,000 = 40,000
	2	THOUSANDS	2 X 1000 = 2000
	5	HUNDREDS	5 X 100 = 500
	7	TENS	7 X 10 = 70
	2	ONES	2 X 1 = 2

REF: MK Bk 5 page 26 – 27

Functional MTC Bk. 5 pg. 17

WK. 3: Lesson 3

Writing figures in words

When writing in words, we group the number into it's major groups:

Example

4,156036

Millions	Thousands	Units
H T O	H T 0	H T 0
4	1 5 6	0 3 6

4 156 036 → **Four millions one hundred fifty six thousands thirty six.**

REF: Understanding MTC bk 5 pg 13, bk 6 pg 23

Prim MTC, Macmillan bk 5 pg 18 – 19

WK. 3: Lesson 4

Writing words in figures

Write six hundred two thousand, four hundred sixty four in figures.

Solution: breakdown the number in its groups.

Six hundred two thousand = 602,000

Four hundred sixty four = + 464

602,464

Example II

Write two million, seven hundred sixty five thousand four hundred thirty two in figures.

Two million ⟶ 2,000,000

Seven hundred sixty five thousand ⟶ 765,000

Four hundred thirty two ⟶ + 432

2,765,432

REF: Mk bk 6 pg 38 -39.

MK. BK 5 PAGE 28-29

Wk.3 lesson 5

EXPANTION OF WHOLE NUMBERS USING VALUES AND POWERS OF BASE TEN.

1. **Expand 349 using values.**

   349= (3×100) + (4×10) + (9×1)

   300+40+9
2. **Expand 48914 using values**
3. **Expand 148 using powers/ exponents.**
4. **Expand 7962 using,**
   i. **Place values**
   ii. **Values**
   iii. **Powers of ten/ exponents**
5. **Writing expanded numbers as single numbers/ short form**
   a. $(2\times10^3)+(4\times10^2)+(3\times10^1)+(7\times10^0)$
   b. **(50000)+(6000)+(400)+(60)+(7)**
   c. $(6\times10^2)+(4\times10^1)+(3\times10^0)$
   d. **(5×10000)+(2×1000)+(7×100)+(6×10)+(9×1)**

WK. 4 Lesson 1

ROMAN NUMERALS

HINDU	1	5	10	50	100	500	1000
ROMAN	I	V	X	L	C	D	M

A) **Repeated Roman numerals**

Numbers with 2 and 3.

2 = I+ I = II

3 = I + I + I = III

20 = 10 + 10 = XX

30 = 10 + 10 + 10 = XXX

2000=1000+1000 = MM

3000= 1000+1000+1000= MMM

200 = 100 + 100 = CC

300 = 100 + 100 + 100 = CCC

B) **Subtraction Roman Numerals**

(Number with 4 and 9)

4 = (5 – 1) = IV

9 = (10 – 1) = IX

400 = (500 – 100) = CD

40 = (50 – 10) = XL

90 = (100 – 10) = XC

900 = (1000 – 100) = CM

WK.4 Lesson 2

C) **Addition Roman numerals**

Numbers with (6, 7 and 8)

6 = (5+1) = VI

7 = (5+2) = VII

8 = (5+3) = VIII

60 = 50 + 10 = LX

70 = (50+20) = LXX

80 = (50 + 30) = LXXX

600 = 500 + 100 = DC

700 = 500 + 200 = DCC

800 = 500 + 300 = DCCC

Examples

Write the following as Roman numerals.

i) 75 = 70 + 5

=LXX + V

= **LXXV**

445 = 400 + 40 + 5

= CD + XL + V

= **CDXLV**

Changing roman numerals to Hindu – Arabic

Express LXXVI in Hindu – Arabic numerals

= LXX + VI

= 70 + 6

= **76**

Mzee Yokana was born in the year MCMXLII. Express this year in Hindu – Arabic.

MCMXLII = M + CM + XL + II

1000 + 900 + 40 + 2

1942

REFERENCE: Mk bk 5 pg 37 – 38

Fountain MTC Bk 5 pg 42 – 46

WK.4: Lesson 3 & 4

ROUNDING OFF WHOLE NUMBERS

Rounding off means expressing a given number as an estimate (rounded) rather than an exact number.

When rounding off, we consider that, if the digit on the right of the required place value is less than 5 we add to it 0 and replace all digits on it's right with 0's.

If the figure on the right of the place value is 5 or more add one to it.

Example

Round off 214 to the nearest tens.

H	T	O
2	1	4
	0	
2	**1**	**0**

Example II

Round off 7591 to the nearest thousands.

Th	H	T	O
7	5	9	1
1	↓	↓	↓
8	0	0	0

$\therefore$ **7591 ≈ 8000**

WK. 4: Lesson 5

OPERATION ON WHOLE NUMBERS

Review of work done in P.4 on addition and subtraction.

Ref: MK. MTC BK. 5 pg 48 – 51

Addition and its application

45038+24826

$$\begin{array}{r} 45038 \\ +\underline{24826} \\ \underline{\underline{69864}} \end{array}$$

Mutoto has 1637 cows and Musaja has 374 more cows than mutoto. How many cows do they have altogether?

No of cows for Musaja=No of cows for Mutoto +374

1637+374=2011

Total number of cows altogether 2011+1637=364

Subtraction and its application

A bus carries 172 passengers while an Omni bus carries 68.How many more people does a bus carry than an Omni bus?

45945 -3243

45945

-3243

42702

Reference: St Bernard Mathematics book 5 page 32-33

WEEK 5 Lesson 1

MULTIPLICATION

Terms used: product

Example

1) Find the product of 28 and 23.

28

X 23

28 x 20 = 560

28 X 3 = + 84

644

23 = 20 + 3

2) In Moses' house there are 13 rooms and each room has 24 chairs. How many chairs are there altogether?

13

X 24

13 x 4 = 52

13 X 20 = + 260

312 chairs

24 = 20 + 4

REFERENCE: Understanding MTC bk 5 pg 42 – 45, MK BK. 6 pg 58 – 60

Macmillan MTC

WK. 5 : Lesson2

DIVISION

Terms used: **share.**

Quotient

Share 288 book s equally among 12 classes.

$$
\begin{array}{r}
024 \\
12\overline{)288} \\
0 \times 2 = \underline{0} \\
28 \\
2 \times 12 = \underline{24} \\
48 \\
4 \times 12 = \underline{48}
\end{array}
$$

1	12
2	24
3	36
4	48
5	60
6	72
7	84
8	96
9	108

Each class gets 24 books

REFERENCE: Understanding MTC bk 5 pg 50 – 56

Mk MTC bk. 5 pg. 58 – 62

WK. 5: Lesson 3

MIXED OPERATION (BODMAS)

Brackets

Of

Division

Multiplication

Addition

Subtraction

1) Workout: 240 ÷ (5 x 8)

240 ÷ 40

$\frac{240}{40} = \underline{\mathbf{6}}$

2) Simplify: 8 – 12 + 4

8 + 4 – 12

12 – 12

0

REFERENCE: Understanding MTC bk 5 pg 56 - 62 MK. MTC BK. 5 PG. 63

WK. 5: Lesson 4

BASES

Introduction
- Names of bas
- The digit used in each base.
- Place values

Bases: are systems of counting or grouping numbers.

Below are some of the systems their names and digits used in each.

Base	Name of base	Digits used
Base Two	Binary	0, 1
Base Three	Ternary	0, 1, 2
Base Four	Quaternary	0, 1, 2, 3
Base Five	Quinary	0, 1, 2, 3, 4
Base Six	Senary	0, 1, 2, 3, 4, 5
Base Seven	Septenary	0, 1, 2, 3, 4, 5, 6
Base Eight	Octal	0, 1, 2, 3, 4, 5, 6, 7
Base nine	Nonary	0, 1, 2, 3, 4, 5, 6, 7, 8
Base Ten	Decimal (denary)	0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Place values in base five

Give the place value of each of the digits in 324_{five}

3   2 4_{five}

ones

fives

five fives

Example II 124_{five}

1   2 4_{five}

Ones

Fives

In base two the place values are:

1   0 1_{two}

ones

twos

two twos

Writing bases in words

A part form base ten (decimal base), when writing other bases in words we name their individual digits.

Example

i) 43_{five} in words is written as

Four, three, base five.

ii) 213_{five} = Two, one, three, base five.

REFERENCE: MK Bk 5, pg 70 – 71

WK. 5: Lesson 5

EXPANDING BASES

Example

Expand 13_{five}

1 3

ones

fives

= (1 group of fives) (3ones)

= (1 x fives) + (3xones)

= **(1 x 5) + (3 x 1)**

Example III

Expand 1 0 1$_{two}$

1 0 1
- ones
- two
- two twos

(1 x 2 x 2) + (0 x 2) + (1 x 1)

(REF: MK. BK. 5, PG. 71)

Wk6. Lesson 1

CHANGING FROM BASE FIVE TO BASE TEN

Example I

Change 14$_{five}$ to base ten

14$_{five}$
- ones
- fives

= (1 x 5) + (4 x 1)

5 + 4

= **9$_{ten}$**

Example II

Change 213$_{five}$ to base ten

Place values 2 1 3
- ones
- fives
- five fives

= (2 x 5 x 5) + (1 x 5) + (3 x 1)

50 + 5 + 3

= **58$_{ten}$**

Example III

Change 2 1 3$_{four}$ to base five.

2 1 3
- Ones
- fours
- four fours

(2 x 4 x 4) + (1 x 4) + (3 x 1)

(8 x 4) + 4 + 3

= **39$_{ten}$**

REFERENCE: MK bk 5 pg 71

WK.6: Lesson 2

CHANGING FROM BASE TEN TO OTHER BASES

Change 9_{ten} to base five

	No.	Rem
5	9	4
	1	

= $\mathbf{14_{five}}$

Change 58_{ten} to base five.

	No.	Rem
5	58	3
5	11	1
	2	

$\therefore 58_{ten}$

$= 2\ 1\ 3_{five}$

Express 33_{ten} to base three

	No.	Rem
3	33	0
3	11	2
3	3	0
	1	

$\mathbf{33_{ten} = 1020_{three}}$

REFERENCE: MK BK 5 pg 72 // Mk. MTC Bk.7, Pg. 43 (Old edition

WK. 6: Lesson 1

& Lesson 2

ADDITION OF BASES

Workout: $24_{five} + 33_{five}$

24_{five}

$\underline{33_{five}}$

$\mathbf{\underline{112_{five}}}$

$4 + 3 = 7 \div 5 = 1^{r2}$

$1 + 2 + 3 = 6 \div 5 = 1^{r2}$

In addition if the answer is bigger than the base we divide, write the remainder and regroup the answer.

Example I

$10011_{two} + 1100_{two}$

10011_{two}

$\underline{1100_{two}}$

$\mathbf{\underline{11111_{two}}}$

ACTIVITY: Understanding MTC bk 6 pg 46 – 47 // MTC bk 7 pg 40

WK. 6: Lesson 4

SUBTRACTION OF BASES

Example: $101_{two} - 11_{two}$

101_{two}

$\underline{-\ 11_{two}}$

$\underline{010}$ ⇒ $\mathbf{\underline{10_{two}}}$

Subtract: 40_{five}

$-\ \underline{22_{five}}$

$\underline{13_{five}}$

REFERENCE: Fountain MTC Bk. 5 pg 80 – 81

WK. 6: Lesson 5

MULTIPLICATION OF BASES

2_{five} X 3

2_{five}

$\underline{X\ 3}$

$\underline{11_{five}}$

$= 6 \div 5 = 1^{r1}$

421_{five}

$\underline{x\ \ 3}$

$\underline{2313_{five}}$

REFERENCE: Mk bk 5 pg 74

Fountain MTC Bk. 5 pg 34

WK 7: Lesson 1

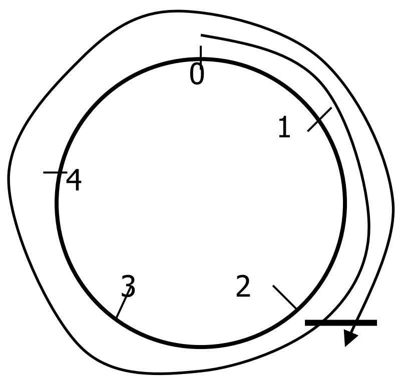
FINITE SYSTEMS

This is a system of grouping where we consider only the remainders.

It can also be called modular (mod) or clock Arithmetic.

Grouping in finite systems

Finite 5.



7 = 2 (finite 5)

By calculation

7 = 7 ÷ 5

= 1^{r2}

7 = 2 (finite 5)

Express 10 in finites

9 = 10 ÷ 5

= 2^{r0}

10 = 0 (finite 5)

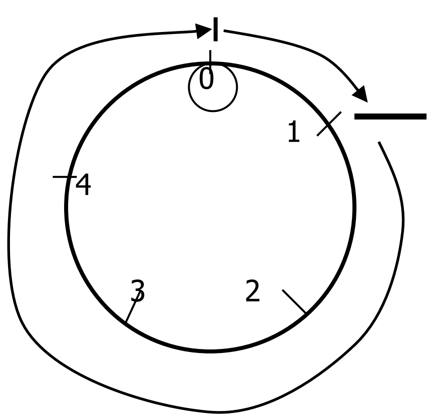
REFERENCE: MK MTC bk 5 pg 204 – 208, MK MTC 2000 Bk.5 PG. 89 – 92

WK 7: Lesson2

ADDITION IN FINITE SYSTEMS

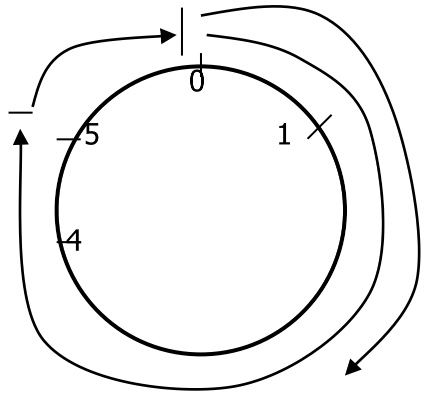
Using a dial

Add: 1 + 4 (finite 5)



1 + 4 = 0 (finite 5)

ii) 4 + 2 + 3 (finite 7)



4 + 2 + 3 + 2 (finite 7)

1 + 4 + (finite 5)

Reference: MK MTC Bk. 5 pg 212, MK MTC 2000 Bk. 5, pg 92 – 94

WK 7: Lesson 3

SUBTRACTION IN FINITE

1. 3 – 4 = ____ (finite 5)

   (5 + 3) – 4

   8 – 4 = 4

2. 6 – 5 = __ (mod 7)

   6 – 5 = 1(mod 7)

APPLICATION OF FINITE 7

If today is Tuesday, what day of the week will it be after 17 days from now?

Ref: MK Bk 7, pg 330

WK. 7: Lesson 4

PATTERNS AND SEQUENCES

Review of P.4 Work on G.C.F and L.C.M from listed factors and multiples

Mk MTC Bk. 5 pg 80 – 82

TYPES OF NUMBERS.

1) Whole numbers ⇒ 0, 1, 2, 3, 4, 5, …

2) Counting numbers/ Natural numbers ⇒ 1, 2, 3, 4, 5,.

3) Odd numbers: These are numbers that give a remainder when divided by 2

   ⇒ {1, 3, 5, 7, …

4) Even numbers: These are ones that are exactly disable by two

   ⇒ {0, 2, 4, 6, 8, 10, …}

5) Prime numbers: These are numbers with only two factors.

⇒ {2, 3, 5, 7, 11, 13, …}

6) Composite numbers: These are numbers with more than 2 factors

⇒ {4, 6, 8, 9, 10, 12, …}

7) Square numbers: These are numbers got by multiplying a number by its self.

⇒ {1, 4, 9, 16, 25, …}

8) Cubic numbers: These are got by multiplying the same number three times.

{1, 8, 27, 64, …)Triangular numbers: These are got by adding consecutive counting numbers.

{1, 3, 6, 10, 15, 21…}

+2 +3 +4 +5 +6

REFERENCE: Understanding MTC bk 6 pg 81 – 84

Mk Bk 5 Pg 80 – 89

WK 8: Lesson 1&2

DIVISIBILITY TESTS

These show which number is exactly divisible by another given number.

Divisibility test for 2.

A number is divisible by 2 if the last digit is an even number

i,e 0, 2, 4, 6, 8, …………..

Divisibility test for 3.

A number is divisible by 3 if the sum of its digits is divisible by 3.

Example

State whether 144 is divisible by 3.

Sum of the digits $1 + 4 + 4$

$= 9$

9 is divisible by 3

∴ 144 is divisible by 3.

Divisibility test for 4

A number is divisible by 4 if its last two digits are zero or divisible by 4.

Divisibility test for 5

A number is divisible by 5 if its last digit is either 0 or 5.

Divisibility test for 6

A number is divisible by 6 if it is even and the sum of its digits is divisible by 3.

Example:

Is 612 divisible by 6 ?

612 is divisible by 6 since it is an even number and the sum of its digits (6+1+2=9) as shown is divisible by 3.

Divisibility test for 7

When the last digit of a number is doubled and the result is subtracted from the number formed by the remaining digits, the result must be divisible by 7.

Example:

Is 861 divisible by 7?

The last digit is 1 and the number formed by the remaining digits is 86.

When is doubled it gives (1+1) =2. Subtract 2 from 86 (86-2) =84.

84 is divisible by 7 $\therefore$ 861 is also divisible by 7.

Note: For big numbers that cannot easily be detected as numbers divisible by 7, repeat the same procedure on the last result obtained after subtracting.

Divisibility test for 9

A number is divisible by 9 if the sum of its digits is divisible by 9.

Example:

198: The sum of 198 is 1 + 9 + 8 = 18

18 is divisible by 9 therefore 198 is divisible by 9.

Divisibility test for 10

A number is divisible by 10 if its last digit is 0.

REFERENCE: MK BK 6 pg 65 – 67.

WK.8: Lesson 3

PRIME FACTORIZATION OF NUMBERS

Prime factorizing means dividing a number by its prime factors.

We use prime factors when prime factorizing e.g. = {2, 3, 5, 7, 11, 13 …}

Example I

Prime factorize 18.

We can either use a ladder or a factor tree. i.e.

2	18
3	9
3	3

1

We can represent the prime factors as follows.

- Set notation / subscript form

18 = $\underline{\{2_1, 3_1, 3_2\}}$

- **Multiplication form**

18 = $\underline{2 \times 3 \times 3}$

power form (expanded form)

18 = $\underline{2^1 \times 3^2}$

Example II

Prime factorize 100.

* Take note of factors of 100 that are prime numbers.

	100
2	50
2	25
5	5
5	1

Subscript form ÷

100 = $\underline{\{2_1, 2_2, 5_1, 5_2\}}$

Multiplication form

100 = $\underline{2 \times 2 \times 5 \times 5}$

Power form

100 = $\underline{2^2 \times 5^2}$

Ref: MK MTC BK. 5 pg 84 – 85, Fountain MTC BK. 5 pg 106 – 108

Understanding MTC Bk. 5 Pg. 79 – 81

WK. 8: Lesson 4

FINDING L.C.M BY PRIME FACTORIZING

Example

Find the L.C.M of 4 and 12 by prime factorization.

2	4	12
2	2	6
2	1	3
3	1	1

L.C.M = 2 x 2 x 3

= 4 x 3

= **12**

Example II

Find the L.C.M of 12 and 20.

2	12	20
2	6	10
3	3	5
5	1	5
	1	1

L.C.M = 2 x 2 x 3 x 5

= 4 x 15

= 60

REFERENCE: MK MTC Bk 5 pg 86.

WK. 8: Lesson 5

FINDING G.C.F BY PRIME FACTORIZING

Example:

Find the G.C.F of 6 and 8

2	6	8
	3	4

G.C.F = 2

Example II

Find the G.C.F of 24 and 36.

2	24	36
2	12	18
3	6	9
	2	3

G.C.F = 2 x 2 x 3

Reference: = 4 x 3 = **12**

NEW MK. BK 5 PAGE 87

WK. 9 : Lesson 1

REPRESENTING PRIME FACTORS ON VENN DIAGRAMS

Example I

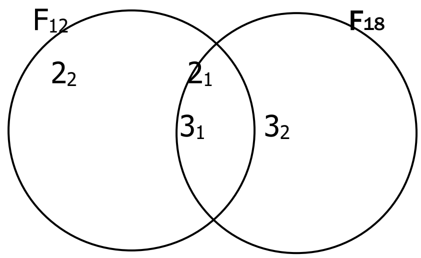
Represent the prime factors of 12 and 18 on a Venn diagram.

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

$F_{12} = \{ 2_1, \quad 2_2, \quad 3_1 \}$

$F_{18} = \{ 2_1, \quad 3_1, \quad 3_2 \}$



a) Find the G>C>F of 12 and 18.

G.C.F product of the intersection

$F_{12} \cap F_{18} = \{2_1, 3_1\}$

∴ **G.C.F = 2 x 3**

<u>6</u>

L.C.M = product of the union.

$F_{12} \cup F_{18} = \{2_1, 2_2, 3_1, 3_2\}$

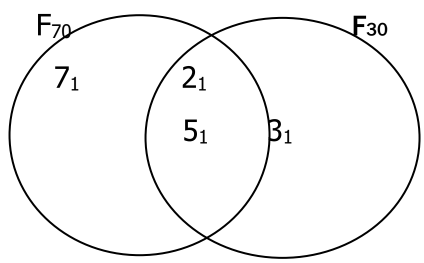
$= 2 \times 2 \times 3 \times 3$

$= 4 \times 9$

= **<u>36</u>**

<u>Example 2</u>

Below is a Venn diagram showing factors.



a) Find the G.C.f of 70 and 30.

G.C.F = product of the intersection

$F_{70} \cap F_{30} = \{2_1, 5_1\}$

G.C.F = 2 x 5

= **<u>10</u>**

b) Find the L.C.M of 20 and 70.

L.C.M =product of the union

L.C.m = $2_1 \times 3_1 \times 5_1 \times 7_1$

= 6 x 35

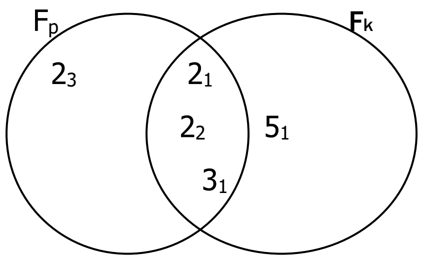
L.C.M = **<u>210.</u>**

Activity: **Fountain MTC Bk. 5 Pg 118 - 119**

MK MTC BK. 6 pg. 8

<u>WK. 9 : Lesson 2</u>

<u>FINDING THE UNKNOWN NUMBER GIVEN PRIME FACTORS ON A VENN DIAGRAM</u>



a) Find the value of p.

$F_p = \{2_1, p\ 2_2 , {}_p3_1\}$

p = 4 x 6

p = **<u>24</u>**

b) Find the value of k.

$F_k = \{2_1, 2_2 , 3_1, 5_1\}$

p= $2_1 \times 2_2 \times 3_1 \times 5_1$

p = 2 x 2 x 3 x 5

p= 4 x 15

p= **<u>60</u>**

REFERENCE: MK BK 6 Pg 88 – 89

<u>WK.9 : Lesson 3,4 and 5</u>

<u>SQUARE ROOTS OF NUMBERS</u>

Review of square numbers.

i.e. {1, 4, 9, 16, 25, 36, 49, 64, 81, …}

<u>A square number</u> is got by multiplying a number by itself.

<u>A square root</u> is a number that is multiplied by its self to give a square number.

The symbol for square root is $\sqrt{\quad}$

<u>Example</u>

Find the square root of 36.

2	36
2	18
3	9
3	3

$\sqrt{36} = \sqrt{(2\times2)\times(3\times3)}$

$\sqrt{36}$ = 2 x 3

= **<u>6</u>**

1

Example:

Find the square root of 100.

2	100
2	50
5	25
5	5
	1

$\sqrt{100} = \sqrt{(\cancel{2}x2)x(5x\cancel{5})}$

$= 2 \text{ x } 5$

$= \underline{\mathbf{10}}$

Ref: MK MTC BK. 5 pg. 89, MK MTC BK. 6 pg. 95