VALLERIAN

MTC LESSON NOTES

FOR TERM I, 2015

P.4.

**Week one lesson four**

**SETS**

**Review of types of sets.**

A set is a collection of well defined members or elements.

**TYPES OF SETS (Review)**

1. Empty set or null set.

This is a set without any members.

Symbol: or Ф

e.g. Pupils in a class without heads.

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1. Equivalent sets

These are sets with the same number of members but the members may be different.

Symbol: ⬄

e.g. A = b,c,d,e B = 0, 1, 2, 3

set A is equivalent to set B

A ⬄ B

N.B. <≠> means “not equivalent to”

1. Equal sets

These are sets with the same number of members which are exactly the same.

Symbol: =

e.g. K = a, b, c, c L = b, a, c

Set K is equal to set L because they have the same number and the same members.

K = L

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1. Disjoint sets

These are sets without any common members.

e.g. M = 6, 7, 8

N = 2, 3, 4, 5

Set M and set N don’t have any common members.

REF: Primary MTC Bk 4 pg 1

* Understanding MTC bk 4 pg 1
* Primary MTC Bk 4 pg 9
* Primary school MTC bk 4 pg 1

**Week one lesson five.**

**UNION, INTERSECTION AND NUMBER OF MEMBERS**

**UNION SETS (Review)**

This is a set which contains all the members in the given sets.

N.B. Common members are written once.

Symbol: U

e.g. Set P = { a, e, , o, u }

Q = { 2, 4, 6, 8 }

Set P U Q = { a, e, , o, u, 2, 4, 6, 8 }

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**INTERSECTION SET (Review)**

This a set with the common members of the given set.

Symbol: “∩”

e.g. P = { 1, 2, 3, 4, 5 }

B = { 0, 1, 3, 4, 5}

Find:

1. P ∩ B = { 2, 3, 4, 5}
2. P U B = { 0, 1, 2, 3, 4, 5}

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1. A = {Banana, Orange}

B = {Apple, Orange}

Find:

1. A ∩ B = { Orange}
2. A U B = { Banana, Orange, Apple }

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**Week two lesson one.**

**NUMBER OF MEMBERS (Review)**

Symbol: n( )

**Examples**

1. P = { a, b, c}

How many members are in set P.

n(P) = 3 members.

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1. M = { days of the week }

Find n(M)

M = {Mon, Tue, Wed, Thur, Fri, Sat, Sub}

Find: n(M) = 7

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REF: - Understanding

* Primary MTC bk 4 pg 14 – 15
* Kenya Primary MTC Bk 4 4 pg 15 – 16

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**Week two lesson two.**

**VENN DIAGRAM (Review)**

Representing information on a Venn diagram:

P Q

Members Members of

Of Set P P∩Q Set Q only

only

**Example:**

Given P = {0, 2, 4, 6, 8}

P = {1, 2, 3, 4, 5, 78}

Find: P∩Q = { 2, 4}

A U B = {0, 1, 2, 3, 4, 5, 6, 7, 8 }

Represent the sets on a Venn diagram.

P Q

REF: MK bk 5 Pg 12

Primary MTC for Uganda bk 4

Pg 60 – 62MK Bk 4 Pg 11 – 14

**Week two lesson three.**

**Shading Venn Diagrams (Review)**

**Example:**

**A-B N-M**

**A B M N**

**A A B K L P**

AUB A∩B KUL P∩B

**Week two lesson four.**

**Getting information from a Venn Diagram (Review)**

**A B**

**List down all members of Set;**

A = { a, b, c, d, g}

B = { c, g, d, e, f}

A∩B = {c, d, g}

A U B = { a, b, c, d, g, e, f }

n(A∩B) = 3 members

REF: MK Bk 5 pg 7

MK Bk 4 pgs 11 – 14

**Week two lesson five.**

**Difference of sets (Review)**

P – Q means members of set P which are not in Set Q, that is, members found in Set P only.

P Q P Q

P – Q Q – P

**Example:**

Given : P = {2, 3, 4, 6, 8, 9}

Q = {1. 2, 5, 6, 7, 10}

Find: P – Q = { 3, 4, 8, 9 }

Q – P = 1, 5, 7, 10}

**Example II**

M N

Find: M – N = {i, c, g}

N-M = { d, e}

**Week three lesson one.**

**SUBSETS**

A subset is a small set got from the main set.

Symbol: “C”

“¢” means not a subset of.

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**Example:**

Given; E = {all pupils in P.4}

K = { all boys in P.4}

B = {all girls in P.4}

Set B and set K are subsets of set E

**Example**

If: D = {1, 2, 3, 4}

T = {2, 4}

S = {1, 3}

K = {5, 6}

T is a subset of D

(T C D)

S is a subset of D

(S C D)

K is not a subset of D

(K ¢ D)

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Given: B = {s,t,v} Form subsets from set B

{ s }, { t }, { v }, { s, t}, {t, v }, {s, v}, {s, t, v}, { }

N.B. - An empty set is a subset of the main set.

- A set itself is a subset of that set.

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**Using a Venn diagram to represent a subset**

Using a Venn diagram to represent subsets.

Q

Set P is a subset of set Q

P c Q

Given: M = {a, b, c, d, e}

N = {a, e}

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Represent the sets on a Venn diagram.

M

Find: M∩N = { a, e}

MUN = { a, b, c, d, e }

n(MUN) 5 Members

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Q What is the relationship between P and

B?

B is a subset of P

Find: P∩B = {3, 4}

REF: MK Bk 4 pg 17 (old edition)

MK Bk 4 pg 17 (new edition)

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**Week three lesson two.**

**NUMERACY.**

**Whole Numbers**

**Place value and value of whole numbers (Review)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Numeral** | **Hundred Thousands** | **Ten thousands** | **Thousands** | **Hundreds** | **Tens** | **Ones** |
| **7041** |  |  | 7 | 0 | 4 | 1 |
| **24,678** |  | 2 | 4 | 6 | 7 | 8 |
| **132,407** | 1 | 3 | 2 | 4 | 0 | 7 |

Finding the place value of the given digits.

What is the place value of 4 in 642?

6 4 2

Ones

Tens

Hundreds

:. The place value of 4 is Tens.

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Find the place value of each digit in 6738.

6 7 3 8

Ones

Tens

Hundreds

Thousands

:. The place value of 6 is Thousands

The place value of 7 is Hundreds

The place value of 3 is Tens

The place value of 8 is Ones

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REF: - Primary School MTC Bk 4 pg 8

- Learning MTC Bk 4 pg 5

- MK Bk 4 pg 20 (Old edition)

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**Week three lesson three.**

**Value of wholes(Review)**

Value = digit x place value

Find the value of each of the digits in 672

H T O

6 7 2

2 x 1 = 2

7 x 10 = 70

6 x 100 = 600

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Find the value of 0 in 6042

6 0 4 2

0 x 100 = 0

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What is the value of 2 in 432?

H T O

4 3 2

2 x 1 = 2

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REF: MK Bk 4 pg 20

Learning MTC Bk 4 pg 6

Primary Science MTC Bk 4 pg 8

**Week three lesson four.**

**Application of values and place values**

**Example:**

Find the sum of the value of 2 and 3 in the number 623.

H T O

6 2 3

3 x 1 = 3

2 x 10 = + 2 0

2 3

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What is the sum of the place value of 6 and 2 in the number 632?

H T O

6 3 2

Ones = 1

Hundreds = + 100

101

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Find the product of the value of 2 and place value of 3 in 362.

H T O

3 6 2

2 x 1 = 2

Hundreds = 100

= 2 x 100

= 200

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The place value of 2 is tens. What is its value.

Value = Digit x Place value

= 2 x 10

= 20

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**Week three lesson five.**

**Writing whole numbers in words(Review)-up to thousands**

1. Write 6438 in words.

|  |  |  |
| --- | --- | --- |
| **Thousands** | **Hundreds** | **Units** |
| 6 | 4 | 38 |

6438 🡪 Six thousand four hundred thirty eight.

1. Write 14,008 in words

|  |  |  |
| --- | --- | --- |
| **Thousands** | **Hundreds** | **Units** |
| 14 | 0 | 08 |

14,008🡪 Fourteen thousand eight.

1. Express 240,402 in words

|  |  |  |
| --- | --- | --- |
| **Thousands** | **Hundreds** | **Units** |
| 240 | 4 | 02 |

240,402 🡪 Two hundred forty thousand four

hundred two.

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REF: MK Bk 4 pg 22

Learning MTC Bk 4 pg 6

Understanding MTC Bk 4 pg 11

**Week four lesson one.**

**Writing in figures(Review)**

Write “three thousand six hundred in figures”.

Three thousand 3000

Six hundred +600

3600

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Write in figures; “Sixty thousand five hundred twenty.

Sixty thousand 60000

Five hundred 500

Twenty + 20

60,520

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REF: Understanding MTC bk 4 pg 13

Primary School MTC BK 4 PG 8

Learning MTC bk 4 pg 6

MK Bk 4 pg 23

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**Week four lesson two.**

**Writing numerals in expanded form(Review)**

Expand 3485 using place values

3485 = (3 x 1000) + (4 x 100) + (8 x 10) + (5 x 1)

Expand 3485 using values

3485 = 3000 + 400 + 80 + 5

Expand: 46,246

46,246 = 40,000 + 6000 + 200 + 40 + 5

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REF: - MK Bk 4 pg 23

- Learning MTC Bk 4 pg 6

- Understanding MTC Bk 4 pg 14

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**Writing the expanded numbers in short. (Review)**

Find the number which has been expanded to get;

1. 4000 x 200 x 40 x 7 4 0 0 0

2 0 0

4 0

+ 7

4 3 4 7

1. (5 x 100) + (6 x 1000)+ (4 x 1)

500 + 6000 + 4

6 0 0 0

5 0 0

+ 4

6 5 0 4

1. (9 x 10000) + (4 x 1000) + (7 x 10)

90000 + 4000 + 70

9 0 0 0 0

4 0 0 0

+ 7 0

9 4 0 7 0

REF: - Learning MTC Bk 4 pg 6

- Understanding MTC bk 4 pg 4

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**Week four lesson three.**

**ROMAN NUMBERALS (Review) – up to one hundred.**

**Basic Roman Numerals are;**

1 = I 50 = L 1000 = M

5 = V 100 = C

10 = X 500 = D

**Roman numerals from 1 to 1000**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Hindu Arabic** | **Roman numeral** |  | **Hindu Arabic** | **Roman numeral** |
| 1 | I | 8 | VIII |
| 2 | II | 9 | IX |
| 3 | III | 10 | X |
| 4 | IV | 50 | L |
| 5 | V | 100 | C |
| 6 | VI | 500 | D |
| 7 | VII | 1000 | M |

**Week four lesson four.**

**Roman numerals got by repeating 1 and X;**

**Examples:** 2 = 1 + 1 = II

3 = 1 + 1 + 1 = III

20 = 10 + 10 = XX

30 = 10+10+10 = XXX

300 = 100+100+100= CCC

**Roman numerals got by adding.**

6 = 5 + 1 7 = 5 + 2

= V + I = V + II

= VI = VII

60 = 50 + 10 700 = 500 + 200

= L + X = D + CC

= LX = DCC

**Roman numerals got by subtracting from 5, 50, 100, 500 and 1000:**

4 = (1 subtracted from 5)

= IV

40 = (10 subtracted from 50)

= XL

90 = (10 subtracted from 100)

= XC

400 = (100 subtracted from 500)

= CD

900 = (100 subtracted from 1000)

= CM

REF: MK Bk 4 pg 32

Primary MTC for Uganda Bk 4 pg 14-17

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**Week four lesson five.**

**Expressing Roman numerals into Hindu Arabic numbers.**

Convert the following to Hindu Arabic numerals:

1. XIV = X + IV

= 10 + 4

= 14

1. XXXIX = XXX + IX

= 30 + 9

= 39

1. XLV = XL + V

= 40 + 5

= 45

1. XCVIII = XC + VIII

= 90 + 8

= 98

1. DCCVII = DCC + VII

= 700 + 7

= 707

REF: - MK Bk 4 pg 34

- Primary MTC for Uganda Bk 4 pg 17

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**Topical questions: MK Bk 4 pg 35**

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**Week five lesson one.**

**OPERATION ON NUMBERS**

**Addition:**

Words used in addition include; Sum, Total, Increase, Altogether, Add, e.t.c.

**Examples:**

1. Find the sum of;

a) 7 4 6 4 b) 1 4 6 7 0 8

+ 4 4 2 5 + 5 2 6 1 4

**11 8 8 9 1 9 9 3 2 2**

1. There are 469 goats, 943 cows and 6401 chicken on the farm. How many animals are there altogether?

4 6 9

9 4 3

+ 6 4 0 1

**7 8 1 3**

:. There are 7813 animals altogether.

REF: - Primary MTC for Uganda Bk 4 pg 23

- MK Bk 4 pg 38

- Primary School MTC bk 4 pg 14

**Week five lesson two.**

**Subtraction of wholes**

Words used include; **Reduce, Decrease, Difference, e.t.c.**

1. Subtract:

a) 8 4 3 2 b) 5 3 2 8 6 7

- 4 7 3 2 - 3 1 4 6 5 8

**3 7 0 0 2 1 8 2 0 9**

1. Subtract 94 from 342.

3 4 2

- 9 4

**2 4 8**

1. What is the difference of 143 and 36?

1 4 3

- 3 6

**1 0 7**

1. Okot had Shs. 630. He bought a toy car for Shs. 560. How much money remained?

Sh. 6 3 0

- Sh. 5 6 0

**Sh. 0 7 0**

REF: - Primary MTC Bk 4 pg 30

* Primary MTC for Uganda bk 4 pg 20-32
* Understanding MTC Bk 4 pg 18-25

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**Week five lesson three.**

**Multiplication of wholes.**

Multiplying of a 3/2 digit number by 1 digit number.

1. 1 3 2. 4 3 3. 12 0

x 2 x 4 x 5

**2 6 1 7 2 6 0 0**

REF: Primary MTC for Uganda bk 4 pg 36

MK Bk 4 pg 46

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**Multiplying numbers by 10 and 20.**

1. 4 2 2. 5 4 3. 3 2

x 1 0 x 1 0 x 2 0

**4 2 0 5 4 0 6 4 0**

REF: MK bk 4 pg 50

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**Multiplying 2-digit numbers by 2 digit numbers**

1. 1 3 OR; 1 3

x 1 2 1 2 🡪 10 + 2

0 2 6 (13 x 10) + (13 x 2)

1 3 0 30 + 26

**1 5 6** 1 3 0

+ 2 6

1 5 6

1. 4 5 4 5

x 1 2 x 1 2 🡪 10 + 2

0 9 0 45 x 10 4 5 0

4 5 0 45 x 2 + 9 0

**5 4 0 5 4 0**

**Multiplying using lattice method:**

**e.g.** 13 x 12

1 3

X1

2

|  |  |
| --- | --- |
| 0  1 | 0  3 |
| 0  2 | 0  6 |

= 156

REF: Primary MTC for Uganda bk 4 pg 40

MK Bk 4 pg 50

Understanding MTC BK 4 pg 26-30

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**Week five lesson four.**

**MULTIPLICATION OF NUMBERS ON A NUMBERLINE**

**E.g.**

1. 3 x 4

4 + 4 + 4

0 1 2 3 4 5 6 7 8 9 10 11 12

= 12

1. 4 x 3

3 + 3 + 3 + 3

0 1 2 3 4 5 6 7 8 9 10 11 12

= 12

**Week five lesson five.**

**Divisions of 3 digit numbers by one digit**

**Use of long division**

Exp: 1 4 6 8 ÷ 2

2 3 4 x 2

2 4 6 8 0 0

2 x 2=4 1 2

0 6 2 4

2x3= 0 6 3 6

0 8 4 8

4x2= 0 8 5 10

0 0 6 12

7 14

8 16

9 18

Exp: 2 Share 570/= among 5 girls

1 1 4 x 2

5 5 7 0 0 0

1 x 5=5 1 5

0 7 2 10

1x5= 0 5 3 15

2 0 4 20

4x5= 2 0 5 25

0 0 6 30

7 35

8 40

9 45

= 114

**DIVISIBILITY TEST**

**Divisibility test of 2:**

A number is divisible by 2 when the last digit is even.

e.g. 50, 22, 94,108, etc.

**Divisibility test of 3:**

A number is divisible by 3 when the sum of digits is divisible by 3.

e.g. a) 21 b) 144

= 2 + 1 = 1 + 4 + 4

= 3 = 9

= 3 ÷ 3 = 9 ÷ 3

= 1 = 3

**Divisibility test of 5:**

A number is divisible by 5 when the last digit is 5 or 0.

e.g. 95, 240,

**Week six lesson one.**

**INTRODUCTION OF COMBINED OPERATION USE BODMAS**

**B -** Brackets

**O -** Of

**D** - Division

**M -** Multiplication

**A -** Addition

**S -** Subtraction

Exp. 1. Work out: 4 + 1 – 2

= (4 + 1) – 2

= 5 – 2

= 3

2. Simplify: 4 + 2 + 5

= 4 + (2 x 5)

= 4 + 10

= 14

**Week six lesson two.**

**Properties of zero:**

1. 0 x 0 = 0
2. Zero multiplied by any number gives 0.

i.e. 0 x 25 = 0 k x 0 = 0

7 x 0 = 0

1. Zero added to any number gives the number to itself.

i.e. 0 + 40 = 40

8 + 0 = 8

1. Any number to the power of zero gives one.

i.e. 40 = 1

1000 = 1

1. Zero divided by any number gives zero.

i.e. 0 ÷ 5 = 0

0 = 0

21

**Properties of one:**

1. Any number multiplied by one give the number itself.

i.e. 1 x 20 = 20

y x 1 = y

0 x 1 = 0

1. Any number divided by one except zero gives the same number.

i.e. 4 = 1

1

y ÷ 1 = y

**Week six lesson three.**

**Magic square:**

Identify the sum or magic number.

Exp. Given the magic square below, find the values of the

letters.

|  |  |  |
| --- | --- | --- |
| 6 | a | 8 |
| b | 5 | c |
| 2 | d | 4 |

Magic number = 2 + 5 + 8

= 15

a = 15 – (8 + 6)

= 15 – 14

= 1

**Week six lesson four.**

**ARRANGING NUMBERS IN ASCENDING OR DESCENDING ORDER.**

**Ascending order (from small to big)**

1. 10, 25, 8, 125

8, 10, 25, 125

1. 75, 38, 146, 238

38, 75, 146, 238

**Descending order (from big to small)**

1. 68, 29, 180, 140

180, 140, 68, 28

1. 758, 587, 857, 875

875, 857, 758, 587

**Week six lesson five.**

**FORMING NUMBERS FROM GIVEN DIGITS UP TO THOUSANDS**

**Examples:**

1. 1, 3, 2

123, 132, 213, 231, 312,321

1. 2, 5, 1, 4:

Find the smallest and highest number formed.

1245, 1254, 1425, 1452, 1524, 1542, 5421,

The smallest is 1245

The highest is 5421

**Week seven lesson one.**

**Estimating numbers**

**Examples to tens:**

1. 23 ≈ 20
2. 46 ≈ 50
3. 125 ≈ 130

**Examples to hundreds:**

1. 142 ≈ 100
2. 361 ≈ 400

**N.B.**  Use a number line.

**Week seven lesson two.**

**Rounding off:**

1. Round off to the nearest tens:
2. 47 T O

4 7

+ 1 0

5 0 47 ≈ 50

1. 63 T O

6 3

+ 0 0

6 0 63 ≈ 60

1. Round off to the nearest hundreds.
2. 349 H T O

3 4 9

+ 0 0 0

3 0 0 349 ≈ 300

1. 473 H T O

4 7 3

+ 1 0 0

5 0 0 473 ≈ 500

**Week seven lesson three.**

**INTRODUCTION TO POWERS / INDICES**

**Using the formula for area of a square:**

e.g. A = 5 x 5

= 52

1. 42 = 4 x 4

= 16

1. 102 = 10 x 10

= 100

1. 32 = 3 x 3

= 9

1. 52 = 5 x 5

= 25

**Week seven lesson four.**

**NUMBER PATTERNS AND SEQUENCE**

A multiple is a product got after multiplying factors.

6 is a multiple of 2 since 2 x 3 = 6 where 2 and 3 are factors.

18 is a multiple of 1, 3, 6, 9 and 2 since

1 x 18 = 18

2 x 9 = 18

3 x 6 = 18

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List down all the multiples of 5 less than 27.

M5 = (1 x 5), (2 x 5), (3 x 5), (4 x 5), (5 x 5)

= 5 10 15 20 55

.: M5 = {5, 10, 15, 20, 25}

REF: Learning MTC bk 4 pg

MK Bk 4 pg 67

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**Week seven lesson five.**

**Finding the Lowest Common Multiples**

1. List down 7 multiples of 6 and 3

M6 = {6,12,18,24,30,42...}

M3= {3,6,9,12,15,18,21}

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1. Find the Common multiples from the above set of multiples.
2. Find the L.C.M. of 3 and 6

The L.C.M of 3 and 6 is 6

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REF: MK Bk 4 pg 67

Understanding MTC bk 4 pg 101

Learning MTC Bk 4 pg 19

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**Week eight lesson one.**

**FACTORS**

**Example**

1. List down all the factors of 6.

1 x 6 = 6

2 x 3 = 6

F6 = {1, 2, 3, 6}

1. List down all the factors of 12.

1 x 12 = 12

2 x 6 = 12

3 x 4 = 12

F12 = {1, 2, 3, 4, 6,12}

1. List down all the factors of 48.

1 x 48 = 48

2 x 24 = 48

3 x 16 = 48

4 x 12 = 48

6 x 8 = 48

F12 = {1, 2, 3, 4, 6, 8, 12, 16, 24, 48}

REF: MK Bk 4 pg 73

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**Week eight lesson two.**

**GREATEST COMMON FACTORS**

Find the G.C.F. of 12 and 15

F12 F15

1 X 12 1 X 15

2 X 6 3 X 5

3 X 4

F12 = {1, 2, 3, 4, 6, 12} F15 = {1, 3, 5, 15}

G.C.F. = 3

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REF: MK Bk 5 pg 82

**Week eight lesson three.**

**TYPES OF NUMBERS**

1. Whole numbers

These start from 0: {0,1,2,3,4,5,6,7........}

1. Counting numbers

Start from one: {1,2,3,4,5,6,7,8....}

1. Even numbers

These are numbers which are exactly divisible by 2 or a number when divided by 2 leaves 0 as a remainder.

{2,4,6,8,10,...........}

N.B. The first even number is 2.

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REF: MK Bk 4 pg 60

Supplementary MTC Bk 4 pg

Learning MTC Bk 4 pg 17

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1. Odd numbers

These are numbers which are not exactly divisible by 2 or when divided by 2 leave a remainder as one.

Example: {3,5,7,9,11,13,15,17,........}

1. Prime numbers

A prime number is a number which has only two factors, that is, one and itself.

Prime numbers less than 50 are:

{2,5,7, 11, 13, 17, 19, 23, 29, 31, 37,41, 43, 47 }

1. Composite numbers

These are numbers that have more than two factors.

Example: {4,6,8,9,10,12,14,15,......}

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REF: Supplementary MTC bk 4 pg

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**Week eight lesson four.**

**SEQUENCE**

1. What is the next number in the sequence?

2, 6, 10, 14, 18, 22 i.e. 18

+ 4

+4 +4 +4 +4 +4 +4 22

1. What is the next number in the sequence?

21, 18, 15, 12, 9 i.e. 12

- 3

-3 -3 -3 -3 -3 9

1. Find the missing number.

2, 3, 5, 7, 11 (Prime numbers)

1. Find the missing number;

64, 32, 16, 8, \_\_\_\_\_\_\_\_\_\_\_\_

1. Find the next number.

1, 3, 9, 27, \_\_\_\_\_\_\_\_\_\_\_\_\_\_

REF: Understanding MTK Bk 4 pg 38

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**Week eight lesson five.**

**GEOMETRY**

**Drawing line segments using rulers.**

**LINES**

A line is a set of points illustrated as

Ray

A ray is a line with one end point.

A line segment has two end points.

A line segment is named by its end points

\_\_

A B AB

**Parallel lines**

Parallel lines are lines which do not meet.

They have the same distance apart at every point.

A

B

C

REF: MK BK 5 PG 175

**Week nine lesson one.**

**Naming lines, rays and line segments.**

Lines are named according to the points through which they pass.

**Name the following:** \_\_\_

Line AB or AB

A B

Ray AB or AB

A B

A B Line segment AB

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Drawing rays and lines**

**Example**

Draw ray AB

A B

Draw line CD

D D

**Week nine lesson two.**

**Drawing line segments of given length**

**Instruments to use:**

* A sharp pencil
* A ruler
* A pair of compasses

**Example:**

Draw a line segment of length 3 cm.

**Procedure:**

* Draw a line of any length
* Mark a point at the beginning of the line.
* Place a ruler on the marked point such that the point is marked “0” cm on t he ruller is a marked point on the paper.
* Measure 3 cm.

3 cm

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**Measuring line segments**

**Instruments used:**

* Ruler

**Example:**

Measure line AB

A B

**Procedure:**

* Place the ruler at A such that the point marked 0cm is at point A.
* Take the reading which corresponds with point B, i.e.,
* AB = 5cm

REF: Understanding MTC Bk 4 pg 7

**Week nine lesson three.**

**Drawing and naming quadrilaterals.**

These are 4 sided figures e.g. squares, rectangles, rhombus, parallelograms, kites, trapeziums, etc.

1. Square
   * + - * It has 4 equal sides
         * It has 4 lines of symmetry.
2. Rectangle

* It has 4 sides
* Opposite sides are equal
* Has two lines of symmetry

1. Rhombus

It has 4 equal sides

It has 2 lines of symmetry.

1. Parallelogram

* It has 4 sides
* Opposite sides are equal and parallel
* Has one line of symmetry.

1. Trapezium
2. Kite

* Opposite sides are equal
* Has one line of symmetry

REF: MK BK 5 pg 184.

Understanding MTK bk 4 pg

**Week nine lesson four.**

**Parts of a circle**.

K PK - Chord

P XO - Radius

XY - Diameter

X O Y Shaded part- Sector

Dotted part - Quadrant

**Week nine lesson five.**

1. **Finding diameter when radius is given**.

D = r x 2

e.g. Find the diameter of circle whose radius is 5cm

Diameter = r x 2

= 5 cm x 2

= 10 cm

1. **Finding radius when diameter is given**.

R = D ÷ 2

e.g. Find the radius of circle whose diameter is 14cm

Radius = D ÷ 2

= 14 cm ÷ 2

= 7 cm

**Week ten lesson one.**

1. **Drawing circles using a ruler and a pair of compass**.

**Exp.** Construct a circle of radius 3cm.

* Draw a line and mark a point to be the centre of the circle.
* Open the compass to radius of 3cm.
* Draw a circle round the centre.

3cm

O

**Week ten lesson two.**

**Types of angles:**

1. **Acute angle:**

It is an angle which measures between 00 and 900.

e.g. 300, 450, 150, 890, etc.

1. **Right angle:**

It is an angle measuring exactly 900.

**Symbol used:**

Right angle

1. **Obtuse angle**.

It is an angle which measures more than 900 but less than 1800.

1. **Reflex angle**.

It is an angle which measures more than 1800 but less than 3600.

e.g. 1850, 2400, 3500, etc.

REF: MK BK 5 pg 193.

**Week ten lesson three.**

**Drawing and measuring angles using a protractor.**

1. Using outer scale.

**Procedure:**

* Draw a line
* Mark a point on the line
* Place the protractor such that its centre is on the point marked on the line.
* Take the reading starting from zero clockwise.

00

1800

900

1. Using inner scale.

**Procedure:**

* Draw a line
* Mark a point on the line
* Place the protractor such that its centre is on the point marked on the line.
* Take the reading starting from zero anticlockwise.

900

90

1800

00

**REF:**

MK Mathematics Bk 5 pg 195

Understanding MTC BK 4 pg 87.