MOTHERCARE PREPARATORY SCHOOLS

SET II REVISION WORK TERM I - 2020

P.7 MATHEMATICS

Time Allowed: 2 Hours 30 Minutes

INDEX NO:	Random No.						Personal No.		

Candidate's Name: GUIDE SET TWO

Candidate's Signature: _____ **Stream:** _____

School Random No: _____

District ID: _____

Read The Following Instructions Carefully.

1. The paper has **two** sections: **A** and **B**.
2. All the working for both sections **A** and **B** must be shown in the spaces provided.
3. **All** working must be done using a blue or black ball – point pen or fountain pen. Diagrams must be drawn in pencil.
4. Un necessary changes of work may lead to loss of marks.
5. Any handwriting that cannot easily be read may lead to loss of marks.
6. Do not fill anything in boxes indicated: "**For Examiners' Use only**" and those inside the question paper.

FOR EXAMINERS' USE ONLY			
SECTION	EXRS MARKS	T/L MARKS	OFFICE
A			
B			
TOTAL			

SECTION A: (40 MARKS)

Answer **all** *questions in this section.*

Questions **1** *to* **20** *carry* **two** *marks each.*

1. Work out: 86 - 68

$$\begin{array}{r} {}^{7}\cancel{8}\,{}^{1}6 \\ -\,6\,8 \\ \hline 1\,8 \end{array}$$ M1 A1

2. Write 44 in Roman numerals.

40 = XL M1
4 = IV
44 = XLIV A1

3. Simplify: $^{-}5 - {}^{-}8$

$-5-(-8)$
$-5+8$ M1
$+3$ A1

+ve: + + + + + + + + = 3
−ve: − − − − −

4. How many $\frac{1}{4}$kg packets of sugar can be got from 20 kg?

$(20\text{kg} \div \frac{1}{4}\text{kg})$ packets M1
$20 \times \frac{4}{1}$ packets
80 packets A1

5. Find the square root of 64.

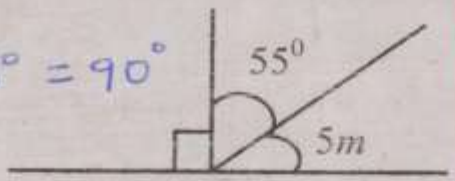
2	2	64
2	2	32
2	2	16
2	2	8
2	2	4
	2	2
		1

M1

$\sqrt[3]{64} = 2 \times 2 \times 2$
$= 8$ A1

10

6. Find the size of angle m in the figure below.



Reject

$5m + 55° = 90°$

$5m + 55° + 90° = 180°$ My

$5m + 145° = 180°$

$5m + 145° - 145° = 180° - 145°$

$5m = 35°$

$\frac{5m}{5_1} = \frac{35°}{5_1}$ 1

$m = 7°$ Aj

$180 - 145 = 35$

7. Musa deposited sh. 400,000 in the bank that offers an interest rate of 5% per month for 6 months. Find the amount of money he earned at the end of the period.

$SI = P \times R \times T$

$SI = sh\ \cancel{400,000} 80000 \times \frac{5}{100} \times 6$

$SI = sh\ 20,000 \times 6$

$SI = sh\ 120,000$ Bj

Amount

$Amount = P + SI$

sh 400,000

+sh 120,000

sh 520,000 Bj

8. Change 30m/s to km/hr

$1000m = 1km$

$30m = \frac{1km}{100} \times 3$

$30m = \frac{3km}{100}$

$3600\ sec = 1hr$

$1sec = \frac{1hr}{3600}$

$S = D \div T$

$S = \frac{3km}{100} \div \frac{1hr}{3600}$ My

$S = \frac{3km}{1} \times \frac{36}{1hr}$

$S = 108\ km/hr$ Aj

$36 \times 3 = 108$

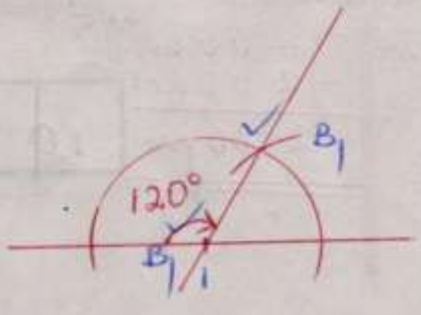
9. Convert 14 40 hour to a 12 – hour clock system.

14 40 hrs My

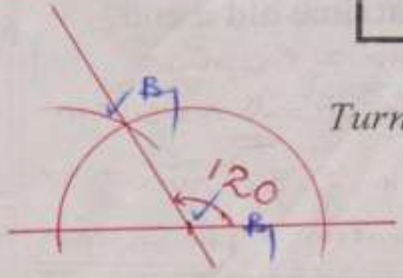
−12 00 hrs

2:40 p.m Aj

10. Using a ruler and a pair of compasses only, construct an angle of 120^0.



OR



10

Turn over

11. Find the probability that Mary was born on a weekend.

SS = {S, M, T, W, T, F, S}
DC = {S, S}
$P = \frac{n(DC)}{n(SS)}$
$P = \frac{2}{7}$

12. Work out: 3 – 5 = 2 (finite 4)

3 + 4 − 5 = — (finite 4)
7 − 5 = — (finite 4)
2 = — (finite 4)
∴ 3 − 5 = 2 (finite 4)

OR

∴ 3 − 5 = 2 (finite 4)

13. Solve: 2(3y – 6) = 12

6y − 12 = 12
6y − 12 + 12 = 12 + 12
6y = 24
$\frac{6y}{6} = \frac{24}{6}$
y = 4

14. If 8 girls can take 5 days to do a piece of work. How many more boys (days) can 4 girls take to do the same piece of work?

8 girls — 5 days
1 girl — 8 × 5 days
1 girl — 40 days
4 girls — 40 days ÷ 4
4 girls — 10 days

Difference
10 days − 5 days
5 more days

15. The US presidential debate started at half past noon, if it lasted for $1\frac{1}{2}$ hrs, at what time did it end?

1 hr = 60 min
$\frac{1}{2}$ hr = $\frac{1}{2} \times 60^{30}$ min
$\frac{1}{2}$ hr = 30 min
Duration = 1 hr 30 min

E.T = S.T + duration

12 : 30 p.m
+ 1 30
14 00 hrs

60 ÷ 60 = 1 r 00

14 00 hrs
− 12 00 hrs
2 : 00 pm

10

16. Paul bought Airtime cards of sh 20,000 each numbered consecutively from AT0046 to AT0065. How much money did he pay altogether?

No of airtime cards

AT0065
- AT0046
(19+1) cards

20 cards B1

Amount

20 x Sh 20000

Sh 400,000 B1

17. Work out; $\frac{1}{2} \div \frac{3}{4}$

$\frac{1}{2} \times \frac{3}{4}$ M1

$\frac{1 \times 2}{1 \times 3}$

$\frac{2}{3}$ A1

18. If ● represents 8balls, draw pictures to represents 40 balls.

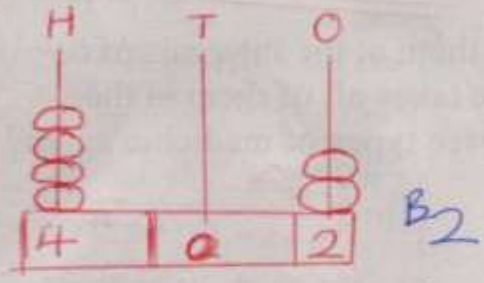
8 balls = 1 picture

40 balls = $\frac{40}{8}$ = 5 pictures

= 5 pictures B1

 B1

19. Represent 402 on an abacus.



B2

20. Triple the angle which is $\frac{1}{9}$ of its complement

Let the angle be n

Angle	Complement
n	(90° - n)

$n = \frac{1}{9}(90° - n)$

$n \times 9 = \frac{1}{9} \times 9(90° - n)$

$9n = 1(90° - n)$

$9n = 90° - n$

$9n + n = 90° - n + n$

$10n = 90°$

$\frac{10n}{10} = \frac{90°}{10}$

$n = 9°$ B1

$9° \times 3 = 27°$ B1

10

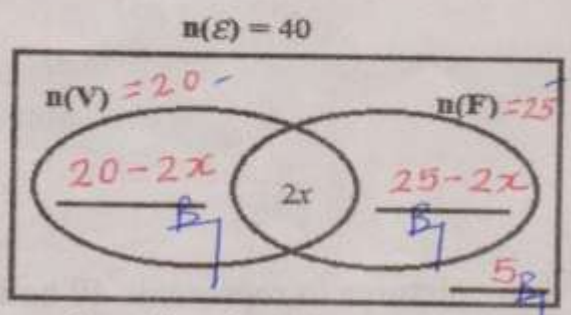
Turn over

SECTION B: (60 MARKS)

*Answer **all** questions in this section.*
Marks for each question are indicated in the brackets.

21. In a class of 40 pupils, 20 like volleyball (V), 25 like football. (F), 2x like both games while 5 pupils do not like any of the two games.

a) Complete the Venn diagram below. *(3 marks)*



b) Find the number of pupils who like both games. *(3 marks)*

$20 - 2x + 2x + 25 - 2x + 5 = 40$ M

$20 + 25 + 5 - 2x = 40$

$50 - 2x = 40$

$50 - 50 - 2x = 40 - 50$

$-2x = -10$

$\frac{-2x}{-2} = \frac{-10}{-2}$

$x = 5$ A

Pupils who like both

(2x) pupils

(2 × 5) pupils

10 pupils B

22. Akello has three types of medicine. She takes them at the intervals of 6 hours, 8 hours and 12 hours respectively. If she takes all of them in the morning, after how long will she take all the three types of medicine again? *(2marks)*

2	6	8	12
2	3	4	6
2	3	2	3
3	3	1	3
	1	1	1

M

$2 \times 2 \times 2 \times 3$ hrs

8×3 hrs

24 hrs A

After 24 hours

OR

$M_6 = \{6, 12, 18, (24), 30, 36, \ldots\}$

$M_8 = \{8, 16, (24), 32, \ldots\}$

$M_{12} = \{12, (24), \ldots\}$

After 24 hours

b) Simplify: $\frac{3}{4} - \frac{5}{6} + \frac{2}{3}$ *(2 marks)*

$\frac{3}{4} + \frac{2}{3} - \frac{5}{6}$ LCD = 12

$\frac{3}{4} \times \frac{3}{3} + \frac{2}{3} \times \frac{4}{4} - \frac{5}{6} \times \frac{2}{2}$ M

$\frac{9 + 8 - 10}{12}$

$\frac{17 - 10}{12}$

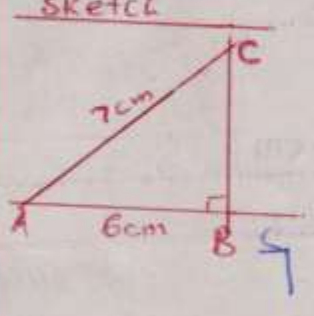
$\frac{7}{12}$ A

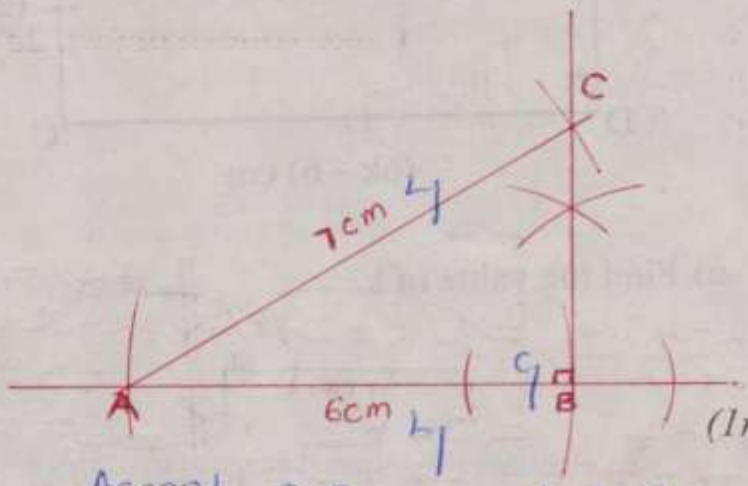
6

10

23. a) Using a ruler and a pair of compasses only, construct a triangle ABC in which AB = 6 cm, AC = 7 cm and angle ABC = 90^0. *(4marks)*

Sketch





b). Measure the line BC. *(1mark)*

3.6cm B1

Accept 3.5cm and 3.7cm

24. The table below shows the marks scored by pupils in a mathematics test.

Marks scored	80	70	90	60
Number of pupils	2	3	1	4

a) How many pupils sat for the test? *(2marks)*

(2+3+1+4) pupils M1

10 pupils A1

b) Calculate the mean *(3marks)*

Mean = $\frac{\text{Sum of items}}{\text{No. of items}}$

$= \frac{(80\times2)+(70\times3)+(90\times1)+(60\times4)}{10}$ M1

$= \frac{160+210+90+240}{10}$

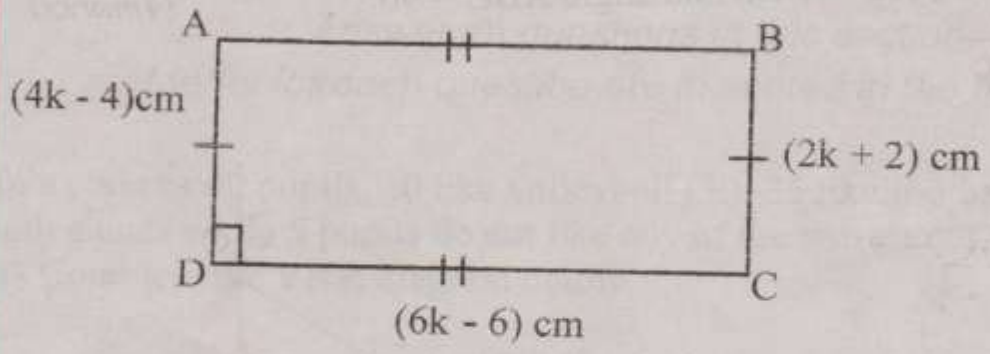
$= \frac{700}{10}$ M1

Mean = 70 marks A1

2	
160	10
210	
240	
+090	
700	

Turn over

25. Study it carefully and use it to answer the questions that follow.



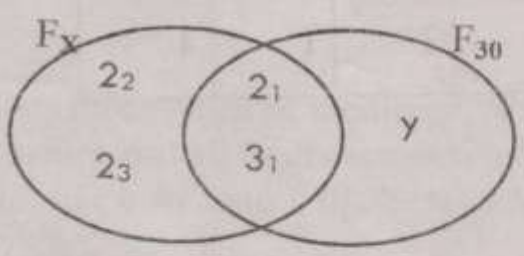
a) Find the value of k. *(2 marks)*

$(4k-4)\text{cm} = (2k+2)\text{cm}$ M1
$4k - 4 = 2k + 2$
$4k - 4 + 4 = 2k + 2 + 4$
$4k = 2k + 6$
$4k - 2k = 2k - 2k + 6$
$2k = 6$
$\frac{2k}{2} = \frac{6}{2}$
$k = 3$ A1

b) Work out the area of the figure above. *(3marks)*

Width	length	Area
$W = (4 \times 3 - 4)\text{cm}$	$L = (6 \times 3 - 6)\text{cm}$	$A = L \times W$
$W = (12 - 4)\text{cm}$	$L = (18 - 6)\text{cm}$	$A = 12\text{cm} \times 8\text{cm}$
$W = 8\text{cm}$ B1	$L = 12\text{cm}$ B1	$A = 96\text{cm}^2$ B1

26. The Venn diagram below represents the prime factors of two numbers. Use it to answer the questions that follow.



a) Find the value of X. *(2marks)*

$X = 2 \times 2 \times 2 \times 3$ M1
$X = 4 \times 6$
$X = 24$ A1

b) Work out the LCM of X and 30. *(3marks)*

$LCM = 2$
$y \times 2 \times 3 = 30$
$6y = 30$
$\frac{6y}{6_1} = \frac{30^5}{6_1}$
$y = 5$ B1

$LCM = 2 \times 2 \times 2 \times 3 \times 5$ M1
$LCM = 24 \times 5$
$LCM = 120$ A1

2
24
× 5
120

10

27. Express 13_{ten} in binary base (3marks)

2 marks

B	N	R
2	13	1
2	6	0
2	3	1
	1	

my

$13_{ten} = 1101_{two}$ Aj

b). Change 134_{five} to decimal base (3marks)

1	3	4	five
5^2	5^1	5^0	

$(1\times5^2)+(3\times5^1)+(4\times5^0)$ my

$(1\times5\times5)+(3\times5)+(4\times1)$

$25+15+4$ my

$25+19$

44

$\therefore 134_{five} = 44_{ten}$ Aj

$$\begin{array}{r} 25 \\ +19 \\ \hline 44 \end{array}$$

28. Grace went to the market and bought the following items;
3 kg of maize flour at sh. 2,000 per kg
2 loaves of bread at sh. 4,500 each
4 kg of salt for sh. 6,000.
a) How much money did she spend altogether? *(3 marks)*

Maize flour	Bread	Salt	Total
sh 2000 x 3	sh 4500 x 2	sh 6000	sh 9000
sh 6000 B	sh 9000 B		sh 6000
			+ sh 6000
			sh 21000 B

b) If she went with sh. 30,000, find her change. *(2 marks)*

Sh $\overset{2}{3}0,000$ my

$-$Sh 21,000

Sh 9,000 Aj

Turn over

10

29. Max, Tina and Nelvin shared a certain amount of money in the ratio of 2: 3: 5 respectively. If Tina got sh. 60,000.

a) How much money did they share altogether? *(3 marks)*

Total ratio = 2 + 3 + 5
= 10 B1
Let their total share be m
$\frac{3}{10}$ of m = sh 60,000 M1
$\frac{3}{10}$ × m = sh 60,000
$\frac{3m}{10} \times \frac{10}{3}$ = sh 60000 × $\frac{10}{3}$
m = sh 20,000 × 10
m = sh 200,000 A1

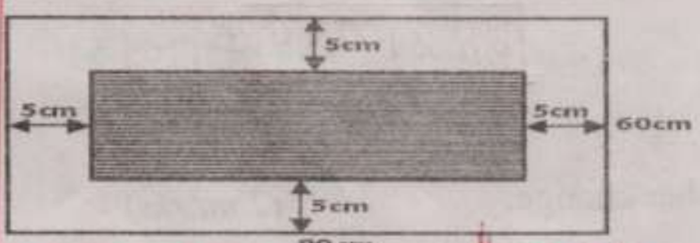
OR
3 parts = sh 60000
10 parts = sh $\frac{60000}{3}$ × 10
10 parts = 20000 × 10
10 parts = sh 200 000
∴ They shared sh 200000

b) How much more money did Nelvin get than Max? *(2 marks)*

Nelvin	Max	Difference
$\frac{5}{10}$ × sh 200,000	$\frac{2}{10}$ × sh 200000	sh 100,000 − sh 40,000
5 × sh 20 000	2 × sh 20000	sh 60,000 more B1
sh 100,000 B1	sh 40,000 B1	

OR
Difference in ratio = 5 − 2 = 3 B1
$\frac{3}{10}$ × sh 200000 M1
3 × sh 20000
sh 60,000 more A1

30. A piece of cloth is laid at the center of a table 80cm long and 60cm wide and it leaves 5cm all round as shown in the diagram below. Find the area which is not covered by the piece of cloth *(5marks)*



Piece of cloth	Table	Uncovered area
L = 80cm − (5cm + 5cm)	A = L × W	4800 cm²
L = 80cm − 10cm	A = 80cm × 60cm	− 3500 cm²
L = 70cm B1	A = 4800 cm² B1	1300 cm² B1
W = 60cm − (5cm + 5cm)		
W = 60cm − 10cm		
W = 50 cm B1		
A = L × W		
A = 70cm × 50cm		
A = 3500 cm² B1		

10

31. (a) Given that x – y = 2, complete the table below correctly.(2marks@)

X	2	3 B	6
Y	0 B	1	4 B

If x = 2

x - y = 2

2 - y = 2

2 - 2 - y = 2 - 2

-y = 0 B

$\frac{-y}{-1} = \frac{0}{-1}$

y = 0

If y = 1

x - y = 2

x - 1 = 2

x - 1 + 1 = 2 + 1

x = 3 B

If x = 6

x - y = 2

6 - y = 2

6 - 6 - y = 2 - 6

-y = -4

$\frac{-y}{-1} = \frac{-4}{-1}$

y = 4 B

32. Kivumbi started his journey from Masaka to Kampala a distance of 125km, at 7:00am driving his Hammer at a speed of 60km/hr. At 8:30am he made a stopover at Mpigi to buy Yamachomo for half an hour, if he was to reach kampala for his business meeting at 9:25am, at what speed must he drive his Car? *(4marks)*

125 km

Masaka 7:00am — S = 60km/hr — Mpigi 8:30am — Kampala 9:25am

Masaka to Mpigi

Time

8 : 30 am

- 7 : 00 am

1hr 30 min

T = $1\frac{1}{2}$ hrs ✓B

Distance

D = S x T

D = 60km/hr x $1\frac{1}{2}$ hrs

D = $\frac{30}{60}$ km x $\frac{3}{2}$

D = 30km x 3

D = 90km ✓B

Mpigi to Kampala

Time

8 : 30 am

+ 30 min

9 : 00 am

9 : 25 am

- 9 : 00 am

25 min ✓

60 min = 1 hr

25 min = $\frac{25}{60}$ hr

T = $\frac{5}{12}$ hr ✓B

Distance

125 km

- 90 km

35 km

Speed

S = D ÷ T

S = 35km ÷ $\frac{5}{12}$ hrs

S = $\frac{35}{1}$ km x $\frac{12}{5}$ hrs

S = 84 km/hr ✓B

60 ÷ 60

1r 00

10