MOTHERCARE PREPARATORY SCHOOLS

REVISION WORK TERM I – 2020

MATHEMATICS SET 7, MARKING GUIDE

Time Allowed: 2 Hours 15minutes

Index No:	Random No.						Personal No.		

Candidate's Name: .....

Candidate's Signature: ..... **Stream:** .....

School Random No. : .....

District ID: .....

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. The paper has **two** sections: **A** and **B**.
2. Answer all questions. All answers to both sections A and B must be written in the spaces provided.
3. **All** answers must be written using a blue or black ball-point pen or fountain pen.
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

1. Work out: $36 \div 3$

$36 \div 3 = 12$

2. Write: "Eighty thousand eighty eight" in figures

$80,000$
$+\quad 88$
80088

3. Solve for y: $2y - 6 > 3$

$2y - 6 + 6 > 3 + 6$
$2y > 9$
$\frac{2y}{2} > \frac{9}{2}$
$y > 4\frac{1}{2}$

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

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

5. Find the square root of 1.44

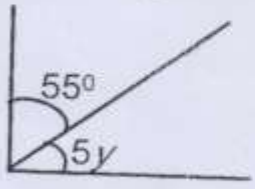
$\sqrt{1.44} = \frac{\sqrt{144}}{\sqrt{100}}$
$= \frac{2 \times 2 \times 3}{2 \times 5}$
$\frac{12}{10}$
$\sqrt{1.44} = 1.2$

2	144
2	72
2	36
2	18
3	9
3	3
	1

2	100
2	50
5	25
5	5
	1

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

$5y + 55^\circ = 90^\circ$
$5y + 55^\circ - 55^\circ = 90^\circ - 55^\circ$
$5y = 35^\circ$
$\frac{5y}{5} = \frac{35^\circ}{5}$
$y = 7^\circ$



7. Musa deposited sh. 400,000 in the bank that offers an interest rate of 5% per month for $1\frac{1}{2}$ years. Find his amount of money he had on his account after $1\frac{1}{2}$ years.

$I = P \times R \times T$
$I = sh.400,000 \times \frac{5}{100} \times \frac{3 \times 12}{2}$
$I = sh.20000 \times 18$
$I = sh.360,000$

Amount
sh. 400,000
+ sh. 360,000
Sh. 760,000

8. Express 72km/hr into metres per second.

1Km = 1000M
72km = 72x1000M
= 72000M
1hr = 3600sec
∴ speed = $\frac{D}{T}$

speed = $\frac{72,000M}{3600sec}$
speed = 20m/sec

9. The Academic committee meeting ended at 4:45pm, what time did the meeting end in 24 hour clock system??

12:00hr
+ 4:45
16:45hrs

10. Using a ruler and a pair of compasses only, construct an angle of 75°.

11. Express 134_{five} into a binary base.

$1|3|4$ five
$5^2|5^1|5^0$
$(1X5^2)+(3X5^1)+(4X5^0)$
$(1X5X5)+(3X5)+(4X1)$
25 + 15 + 4
44ten

B	N	R
2	44	0
2	22	0
2	11	1
2	5	1
2	2	0
	1	

101100two

12. A man bought a watch at sh. 20,000 and later sold it at sh. 15,000. Calculate his percentage loss.

Loss = BP - SP
= sh. 20,000
- sh. 15000
sh. 5000

Percentage loss
$\frac{Loss}{B.P} \times 100\%$
$(\frac{sh.5000}{sh.20000} \times \frac{5}{100})\%$
25%

13. Work out: 2 – 5 = 3 (finite 6).

(2+6) - 5 = _(finite 6)
8 - 5 = 3(finite 6)

14. The LCM of two numbers is 100 and their GCF is 5. If one of the numbers is 20, find the second number.

Second number = $\frac{LCM \times GCF}{1st\ number}$
= $\frac{5}{100} \times 5$
$\frac{20}{1}$
Second number = 25

15. During an interview, two marks are awarded for the correct answer and one mark is deducted for any wrong answer given. If twenty questions were asked and Mukuluu passed half of the questions asked, how many marks did he get?

$\frac{1}{2} \times 20^{10}$
10 correct answers.

Marks scored
$(10 \times 2) - (10 \times 1)$
$20 - 10$
10 marks.

16. Solve: $\frac{2}{3}k - 6 = 12$

$\frac{2k}{3} - 6 + 6 = 12 + 6$
$\frac{2k}{3} = 18$
$\frac{2k}{3} \times \frac{3}{2} = 18 \times \frac{3}{2}$
$k = 27$

17. A lady had sh. 27,000 in her bag. She spent $\frac{1}{3}$ on meat and half of the remainder on fish. How much money did she remain with?

Meat: $\frac{1}{3} \times$ sh. 27,000
sh. 9000

Remainder
sh. 27,000
sh. 9000
sh. 18,000

Fish: $\frac{1}{2} \times$ sh. 18,000
sh. 9000

Remainder
sh. 18,000
sh. 9000
Sh. 9,000

18. The circumference of a circle is 88 m, find its diameter (Take π as $\frac{22}{7}$).

$\pi d = c$
$\frac{22}{7} \times d = 88m$
$\frac{22}{7}d \times \frac{7}{22} = 88m \times \frac{1}{22}$
$d = 28m$

19. If 8 girls can take 20 days to do a piece of work. How many less days can 16 girls take to do the same piece of work?

8 girls take 20 days
1 girl takes (8×20) days
16 girls take $(\frac{8 \times 20^{10}}{16_2})$ days
16 girls will take 10 days

less days
$(20 - 10)$ days
10 days.

20. There are 16 subsets in set A. How many members can be got from set A?

2^n = no of subsets.
$2^n = 16$
$2^n = 2^4$
$n = 4$

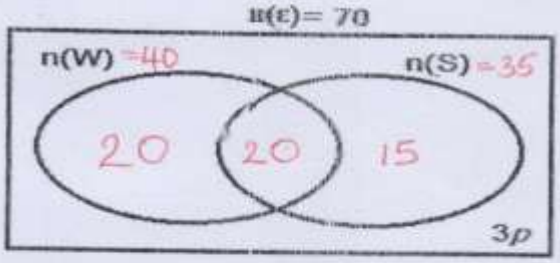
2	16
2	8
2	4
2	2
	1

Set A has 4 members.

SECTION B: (60 MARKS)

21. In a party attended by 70 people, 40 took water (W), 15 took soda (S) only, 20 took both drinks while *3p* did not take any of the two drinks.

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



40-20
20

20+15
35

b) Find the number of people who took neither of the two drinks. *(2 marks)*

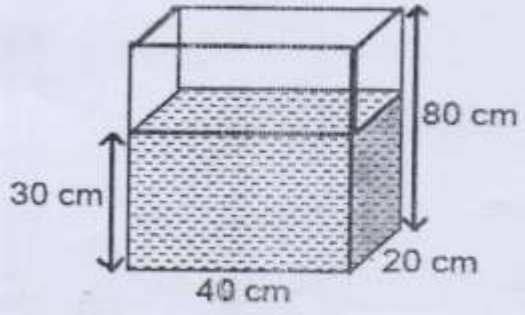
$3p + 20 + 20 + 15 = 70$
$3p + 55 = 70$
$3p + 55 - 55 = 70 - 55$
$3p = 15$
$\frac{3p}{3} = \frac{15}{3}$
$p = 5$

$3p = 3 \times p$
$= 3 \times 5$
$= 15$ people took neither

c) How many people took water but not soda? *(1 marks)*

20people

22. The figure below contains the amount of water. Use it to answer the questions that follow.



a) Find the amount of water contained in the tank in litres. *(2 marks)*

Volume = L x W x H
= 40cm x 20cm x 30cm
= 800cm² x 30cm
Volume = 24000cm³

Capacity
$\left(\frac{24000\ cm^3}{1000\ cm^3}\right)$ litres
24 litres

b) How many litres of water are needed to fill the tank? *(2 marks)*

When full.
Volume = L x W x H
= 400cm x 200cm x 80cm
= 80000 cm^2 x 80cm
Volume = 6400000 cm^3

Capacity
$\left(\frac{6400000cm^3}{1000cm^3}\right)$ litres
64 litres

No. of litres needed to fill the tank.
64 litres
− 24 litres
40 litres

23. The sum of three consecutive even numbers is 120. If the largest number is k, find the numbers. *(3 marks)*

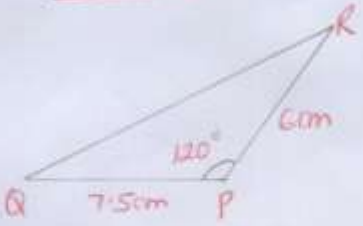
1st no	2nd no.	3rd no.	Sum
K-4	K-2	K	120

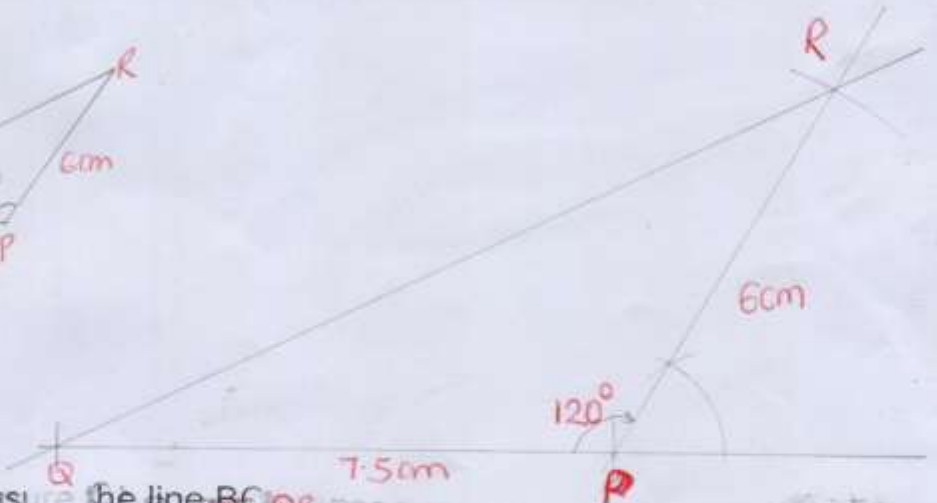
K-4+K-2+K = 120
K+K+K-2-4 = 120
3K - 6 = 120
3K - 6+6 = 120+6
3K = 126
$\frac{3K}{3} = \frac{126}{3}$
K = 42

1st no	2nd no	3rd no.
K - 4	K - 2	K
42 - 4	42 - 2	42
38	40	

24.a) Using a ruler and a pair of compasses only, construct a triangle PQR in which PQ = 7.5 cm, PR = 6 cm and angle QPR = 120°. *(4 marks)*

Sketch





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

QR = 11.7cm

25. The table below shows the marks scored by pupils in a mathematics exam.

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

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

$2+3+1+4$
$5+5$
10 pupils

b) If the mean mark is 70, find the value of h. *(3marks)*

Sum of data = mean.
No of data

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

$$\frac{160+3h+90+240}{10} = 70$$

$$\frac{3h+490}{10} = 70$$

$10\times\frac{(3h+490)}{10} = 70\times10$

$3h+490 = 700$

$3h+490-490 = 700-490$

$3h = 210$

$\frac{3h}{3} = \frac{210}{3}$

$h = 70$

$h = 70$

26. The head teacher went to the bank and withdrew the amount of money as shown on the table below. Use it to answer the questions that follow.

Denomination	Number of notes	Amount
Five thousand shilling notes	40 notes	Sh. 200000
Twenty thousand shilling notes	35 notes	Sh. 700,000
Ten thousand shilling notes	30 notes	Sh. 300,000
Fifty thousand shilling notes	12 notes	Sh. 600,000
	Total	Sh. 1,800,000

a) Complete the table above correctly. *(5 marks)*

Sh. 5000×40
Sh. 200000

Sh. 300000
Sh. 10,000
30 notes

Sh. 700,000
Sh. 35
Sh. 20,000

Sh. 200,000
Sh. 700,000
Sh. 300,000
Sh. 1,200,000

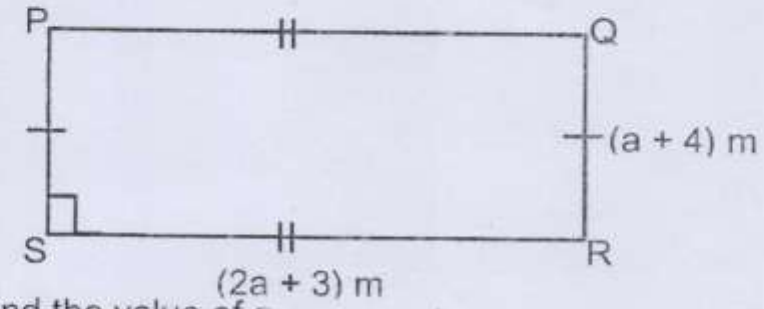
Sh. 1,800,000
− Sh. 1200000
Sh. 600,000

Sh. 600,000
Sh. 50,000
12 notes

b) If he used sh. 245,000 for buying the scholastic materials, how much change did he remain with? *(1 mark)*

Sh. 1,800,000
− Sh. 245,000
Sh. 1,555,000

27. The perimeter of the rectangle below is 50 m. Use it to answer the questions that follow.



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

$2L + 2W = P$

$2(2a+3)m + 2(a+4)m = 50m$

$4a + 6 + 2a + 8 = 50$

$4a + 2a + 6 + 8 = 50$

$6a + 14 = 50$

$6a + 14 - 14 = 50 - 14$

$6a = 36$

$\frac{6a}{6} = \frac{36}{6}$

$a = 6$

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

Length: $(2a+3)m$, $(2\times6+3)m$, $(12+3)m$, $15m$

Width: $(a+4)m$, $(6+4)m$, $10m$

Area = L × W

Area = 15m × 10m

Area = $150m^2$

28. In a school of 3000 pupils, $\frac{2}{3}$ of them are girls and the rest are boys. If $\frac{1}{4}$ of the boys and $\frac{2}{5}$ of the girls are in lower primary, how many pupils are in upper primary? *(3 marks)*

Girls: $\frac{2}{3} \times 3000^{1000} = 2000$ girls

Boys: $3000 - 2000 = 1000$ boys

In lower primary:

$(\frac{1}{4} \times 1000^{250})$ boys

250 boys.

$(\frac{2}{5} \times 2000^{400})$ girls

800 girls

Total: $800 + 250 = 1050$ pupils

In upper primary

29.a) Find the product of the value of 6 and 5 in the number 158.063. *(2marks)*

H T O t h th
158.063
L 6 × 1/100 = 6/100
L 5 × 10 = 50

product
50 × 6/100
5 × 6 / 10
30/10 = 3

b) What number has been written in standard form to give 6.5×10^5? *(2marks)*

6.5×10^5
$\frac{65}{10} \times 10 \times 10 \times 10 \times 10 \times 10$
650000

c) If $43_n = 113_{four}$, find the value of *n*. *(3marks)*

$(4 \times n^1) + (3 \times n^0) = (1 \times 4^2) + (1 \times 4^1) + (3 \times 4^0)$
$(4 \times n) + (3 \times 1) = (1 \times 4 \times 4) + (1 \times 4) + (3 \times 1)$
$4n + 3 = 16 + 4 + 3$
$4n + 3 = 23$
$4n + 3 - 3 = 23 - 3$
$4n = 20$
$\frac{4n}{4_1} = \frac{20^5}{4_1}$
$n = 5$

$n = 5$
n is base five.

30. For a visit to a National Park, a teacher pays as much as 2 students. At one time, 3 teachers and 18 students were charged sh. 600,000. Find the charge for a student. *(3 marks)*

1 teacher — 2 students
3 teacher — (3 × 2) students
6 students.

Total
(18 + 6) students
24 students.

Amount per student
25 000
24 | sh. 600,000
sh. 25,000

31. Muwawu, Tamale and Rukundo shared a certain amount of money in the ratio of 4: 3: 5 respectively. If Tamale got sh. 80,000 less than Rukundo,

3

a) How much money did they share altogether? *(4 marks)*

Muwawu	Tamale	Rukundo	total
4	3	5	12

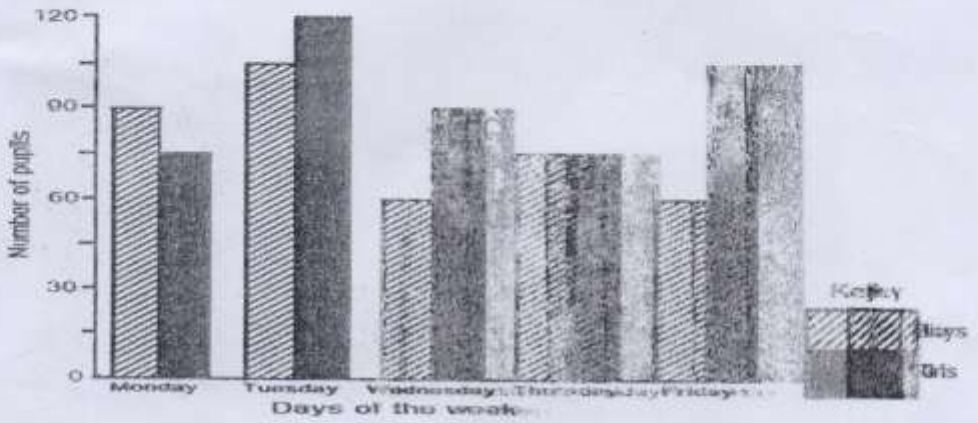
Tamale less than Rukundo
$5 - 3 = 2$
2 parts — sh. 80,000
1 part — sh. $\frac{80,000}{2}$

1 part — sh. 40,000
12 parts — sh. 40,000 × 12
sh. 480,000

b) What percentage of the money did Tamale get? *(1 marks)*

$\left(\frac{3}{12} \times \frac{25}{100}\right)\%$
$\frac{1}{4}$
25%

32. The bar graph below shows the number of boys and girls who were present in a week. Study it carefully and answer the questions that follow.



a) How many boys were present on Tuesday? *(1 mark)*

$30 \div 2 = 15$
90 + 15
105 boys

b) Which day had the same number of boys and girls present? *(1 mark)*

Thursday.

c) Find the average attendance of the girls for the whole week. *(2 marks)*

Average = $\frac{\text{sum of data}}{\text{No of data}}$
$= \frac{75 + 120 + 90 + 75 + 105}{5}$
Average = $\frac{465}{5}$ (93)

Average = 93 girls