KAMPALA PRIMARY SCHOOLS HEADTEACHERS' EXAMINATIONS COMMITTEE (KAPSHA)

PRIMARY SEVEN PRE-MOCK EXAMINATIONS 2024

MATHEMATICS

TIME ALLOWED: 2 HOURS 30 MINUTES.

Random No.						Personal No.		

Candidate's Name: MARKING GUIDE

School: _____

Division: _____ ***School No:*** | | | | |

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Read the following instructions carefully.

1. This paper is made up of two sections: **A** and **B**
2. Section **A** has ***20*** questions (**40** marks)
   Section **B** has ***12*** questions (**60** marks)
3. Answer **all** questions. **All** answers to both section **A** and **B** must be written in the spaces provided.
4. ALL answers **MUST** be written using a **Blue** or a **Black** - point pen of fountain pen.
5. Un-necessary changes of work may lead to loss of marks.
6. Any handwriting that cannot easily be read may lead to loss of marks.
7. Do **not** fill any thing in the boxes shown ***"For Examiner's use only".***

FOR EXAMINERS' USE ONLY		
QN. NO	*MARKS*	*SIGN.*
1 – 10		
11 – 20		
21 – 25		
26 – 30		
31 – 32		
TOTAL		

TURN OVER

SECTION A (40Marks)

1. **Add:**
$$\begin{array}{r} 14 \\ +52 \\ \hline 66 \end{array}$$ B2

2. Write **XLIX** in words.

XLIX = XL = 40
IX = 9
49 B1

Forty nine. B1

3. Given that set **P** = {odd numbers less than 10} and set **Q** = {Prime numbers less than 10}
Find **AnB**

P = {1, 3, 5, 7, 9} B1
Q = {2, 3, 5, 7} B1

$P \cap Q = \{3, 5, 7\}$ B1

4. Write **34.396** in standard form.

$34.396 = 3.4396 \times 10^{1}$ B2

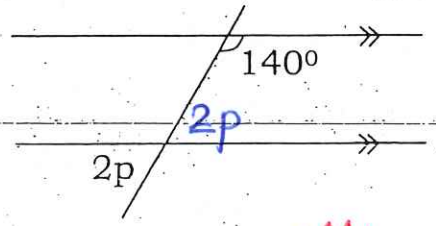
5. **Simplify:** 7k – 3h + k + 6h

7k – 3h + k + 6h

7k + k + 6h – 3h M1

8k + 3h A1

6. Find the value of **P** in degrees.



2p + 140° = 180° M1
2p + 140° – 140° = 180° – 140°
2p = 40°
$\frac{2p}{2} = \frac{40^\circ}{2}$
p = 20° A1

7. Find the least number of oranges that can be shared among **12** or **18** P.7 pupils without leaving a remainder.

2	12	18
2	6	9
3	3	9
3	1	3
	1	1

M1

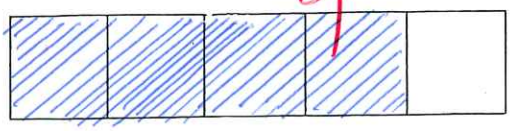
(2×2)(3×3)
4×9
36 A1

8. Round off **479.995** to the nearest hundredths.

$$\begin{array}{r} {}^{1}\,{}^{1}\,{}^{1} \\ 479.995 \\ +\ \ 0.01 \\ \hline 480.00 \end{array}$$ M1 A1

16

9. In the diagram below shade **80%**



B1

80% of 5

$\frac{80}{100} \times 5 = \frac{8}{10} \times \frac{1}{5} = 4$ parts. B1

10. **Simplify:** ⁻8 - ⁻10

$-8 - {}^-10 = -8(-)10.$

$= -8 + 10$ M1

$= +2$ A1

11. Find the next number in the sequence below.

24, 17, 11, 6, 2 B1, -1 B1

+7 -6 -5 -4 -3

12. Change **36km/hr** to meters per second.

1km = 1000m

36Km = 36 × 1000m

= 36000m ✓

1hr = 3600sec.

$S = \frac{D(m)}{T(sec}$ ...

$\frac{36000m}{3600sec}$ M1

= 10m/sec. A1

13. At Sarah's snop **4**pens cost **sh.4,800**. How many pens would one get if he has **sh.8,400**?

4 pens costs sh. 4800

1 pen costs sh. $\frac{4800}{4}$

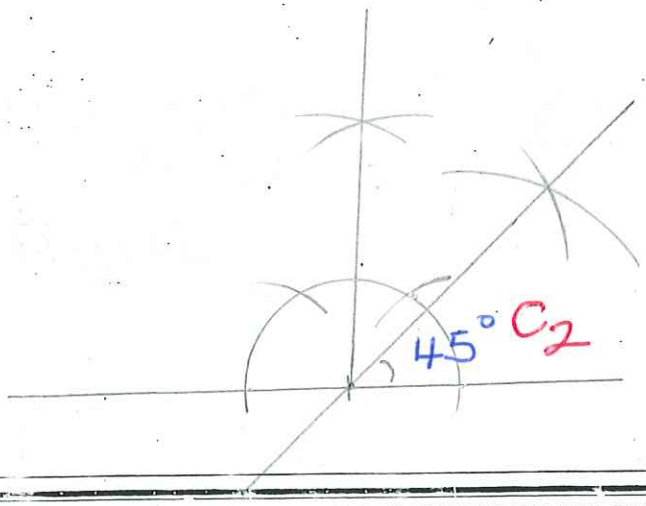
= sh. 1200 B1

sh. 1200 buys 1 pen.

sh. 8400 buys $\frac{8400}{1200}$ pens.

= 7 pens. B1

14. Using a pair of compasses, ruler and pencil only, construct an angle of **45°**



12

15. The average weight of **6** boys is **50kg**. If two boys of total weight **120kg** leave the group, find the total weight of the remaining boys.

Sum of 6 boys

Sum = A × N

= 50kg.

× 6

300 kgs B1

Total of 4 boys.

300kgs − 120kg = 180kgs ✓

Av. = S/N.

= 180kg / 4 (45)

= 45kgs B1 B1

16. **Work out:** $\frac{2}{3} + \frac{3}{4}$

$\frac{2}{3} + \frac{3}{4} = \frac{8+9}{12}$ M1

$= \frac{17}{12}$

$= 1\frac{5}{12}$ A1

17. Solve for **P** in P + ½P = 6

$P + \frac{1}{2}P = 6$.

$2 \times P + \frac{1}{2}P \times 2 = 6 \times 2$.

$2P + P = 12$ M1

$3P = 12$

$\frac{3P}{3} = \frac{12}{3}$ (4)

$P = 4$ A1

18. A football match ended at 1:10pm after being played for **90**minutes. Find the time at which the football match started.

Change 1:10pm to 24 hr. clock.

1 · 10 pm

12 · 00

13 10hrs. B1

1 hr = 60 min

60 | 90

−60

30 min

= 1 hr. 30min

Hrs Min

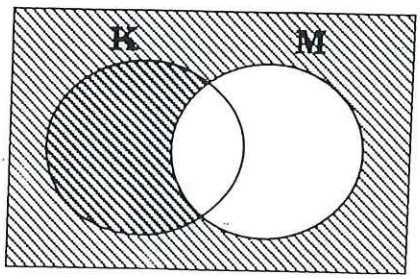
12 60 (70)

13 10

−1 30

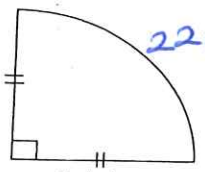
11 · 40 am A1

19. Describe the unshaded part.



Set M B2

20. Work out the perimeter of the figure below.



Length of curve.

$\frac{1}{4}(2\pi r)$

$\frac{1}{4} \times (2 \times \frac{22}{7} \times 14\text{dm})$

= 22 dm B1

Perimeter

22dm

14dm

+ 14dm

50dm B1

SECTION B (60marks)

21. a) Express 402_{five} to a decimal base.

4	0	2
5^2	5^1	5^0

$(4\times5^2)+(0\times5^1)+(2\times5^0)$ M1

$(4\times5\times5)+(2\times1)$

$100+2$

102ten A1 (2marks)

b. If $44_p = 35_{nine}$. Find the value of **P**.

4	4
p^1	p^0

$=$

3	5
9^1	9^0

$(4\times p^1)+(4\times p^0)=(3\times9^1)+(5\times9^0)$ M1

$(4\times p)+(4\times1)=(3\times9)+(5\times1)$

$4p+4=27+5$

$4p+4=32$

$4p+4-4=32-4$

$4p=28$

$\frac{4p}{4}=\frac{28}{4}$ M1

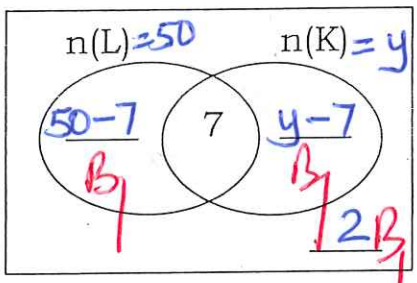
$p=7$

p = base 7 A1 (3marks)

22. In a class of **80**pupils, all of them speak English. **50** speak English and Luganda (L), **Y** pupils speak English and Kiswahili (K), **7** pupils speak all the **3** languages while **2** pupils speak only English.

a) Represent the above information on Venn diagram below.

$n(\mathcal{E}) = 80 = E$



B1 B1 2B1 (3marks)

b. Find the number of pupils who speak English and Kiswahili only.

$y-7+7+50-7+2=80$

$y+43+2=80$

$y+45=80$

$y+45-45=80-45$

$y=35$ B1

English & Kiswahili Only

$y-7=35-7$

$=28$ pupils B1 (2marks)

23. a. **Work out**: $\frac{0.024+0.012}{3.6-1.8}$

$0.036\div1.8$

$\frac{36}{1000}\div\frac{18}{10}$ ✓

$\frac{36^2}{1000}\times\frac{10}{18_1}$ ✓

$\frac{02}{100}=0.02$ A1

$0.024+0.012=0.036$ B1

$3.6-1.8=1.8$ B1 (3marks)

b. Express **0.2424**.... as a rational number in its simplest form.

$y=0.2424...$ (a)

$100xy=0.2424...\times100$ (b)

$100y=24.2424..$ (b)

Subtract (b) − (a)

$100y=24.2424..$

$-\ y=0.2424..$ M1

$99y=24$

$\frac{99y}{99}=\frac{24}{99}$ (F3)

$\frac{8}{33}$

$y=\frac{8}{33}$ A1 (2marks)

15

24. A motorist left town **A** at **8:00am** and reached town **B** at **10:00am** driving at a speed of **90km/hr**. Then he left for town **C** at a speed of **60km/hr** for 3hours.

8:00am S=90Km/hr 10am S = 60Km/hr
A B 3hrs. C

a. How far is town **B** from town **A**?

Time taken:
10.00
− 8.00
2.00
= 2hrs. B1

D = S×T.
= 90Km/hr × 2hrs M1
= 90×2 Km
= 180Km A1

(3marks)

b. Calculate the average speed for the whole journey.

$D_2 = S_2 \times T_2$
= 60Km/hr × 3hrs
= 180Km B1

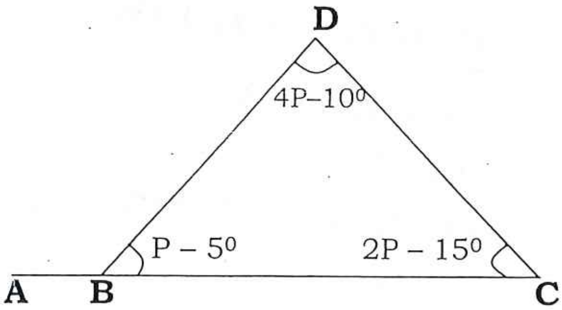
Total distance
180Km
+180Km
360Km ✓

Total time
2hrs + 3hrs.
5hours ✓

Av. Speed = TDC/TTT
= 360Km / 5hours ✓
= 72 Km/hr A1

(2marks)

25. **Study the triangle below and use it to answer questions that follow.**



a. Find the value of **P**.

4p−10+2p−15+p−5 = 180 M1
4p+2p+p−10−15−5 = 180°
7p − 30 = 180°
7p−30+30 = 180+30°
7p = 210
7p/7 = 210/7 M1
p = 30° A1

(3marks)

b. Find the angle marked **ABD**

∠p−5 = 30°−5°
= 25° B1

∠ABD + 25° = 180°
∠ABD + 25° − 25° = 180° − 25°
∠ABD = 155 B1

(2marks)

10

26. Mwiza bought the following items in the table below from Mr. Wasoma's shop in Katwe.

a. **Complete the table.** *(4marks)*

ITEM	UNIT PRICE	AMOUNT
3 bars of soap	sh. 4,000	sh. 12,000 B1
2 loaves of bread	sh. 5,000 B1	sh. 10,000
2½ B1 kg of salt	sh. 800	sh. 2,000 B1
TOTAL EXPENDITURE		sh. 24,000

Soap:
sh. 4000
× 3
sh. 12,000 ✓

Bread.
5 000
sh. ~~10,000~~
2
sh. 5000 ✓

12,000/=
+ 10 000/=
22,000/= ✓

24,000/=
22,000/=
2,000/= ✓

Salt
5
~~2000~~
~~800~~
2
= 5/2 kg,
= 2½ kg ✓

b. If Mwiza paid **sh. 18,000** what percentage discount was she given?

%age disc = disc / Original × 100%

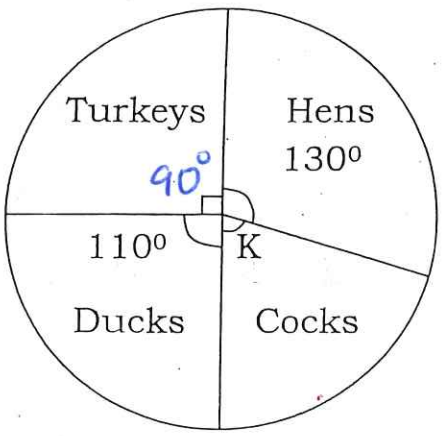
= ~~sh.6000~~ / ~~sh.24000~~ × 100%
1 4

= 100/4 % = 25% B1

sh. ~~1~~4 000
sh. -18,000
sh. 6,000 B1

(2marks)

27. The pie-chart below shows how birds are distributed on Mrs. Namuli's farm in Nkokonjeru Mukono District. Use it to answer questions that follow.



a. Find the value of **K**.

K + 110° + 90° + 130° = 360° M1
K + 200° + 130° = 360°
K + 330° = 360°
K + 330° − 330° = 360° − 330°
K = 30° A1

(2marks)

b. If there are **4** more ducks than Turkeys, Find the total number of birds on Namuli's farm.

Difference in degrees.

110°
− 90°
20° B1

Let the total be y

$\frac{20}{360}$ of y = 4. M1

$\frac{36}{1} \times \frac{2}{36} y = 4 \times 36$,

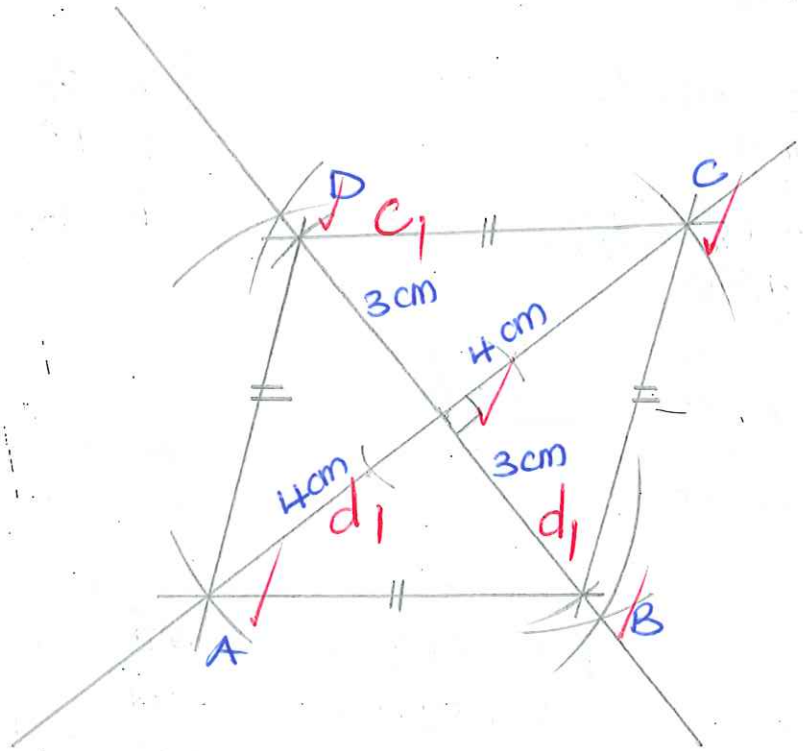
$\frac{2y}{2} = \frac{4 \times 36}{2}$

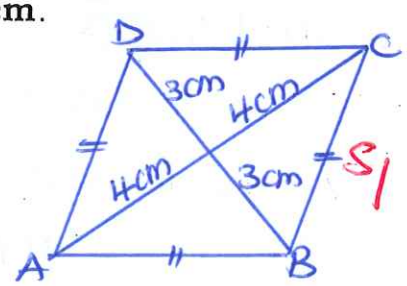
y = 2 × 36 birds

y = 72 birds A1

(3marks)

28. a. Using a ruler, a pencil and a pair of compasses only, construct a rhombus ABCD where **AC = 8cm** and **BD = 6cm**.





S1

(4marks)

b. Measure the length **AB.**

AB = 5cm B1

08

(4marks)

29. A tank is $\frac{3}{4}$ full of water. When 20litres are removed it becomes $\frac{2}{3}$

How many litres does the tank hold when it is completely full?

Fraction removed.

$\frac{3}{4} - \frac{2}{3} = \frac{9-8}{12}$

$= \frac{1}{12}$ B1

Let the full capacity be x

$\frac{1}{12}$ of $x = 20$ litres M1

$12 \times \frac{1}{12}x = 20 \times 12$.

$x = 240$ litres A1

(3marks)

b. If **1**litre costs **sh. 2,000**, how much will the tank cost when it's completely full?

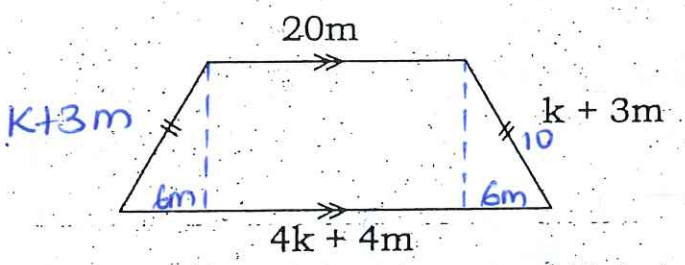
1 litre costs sh. 2000

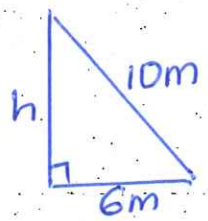
240 litres costs sh. (240×2000) M1

sh. 480,000 A1

(2marks)

30. The shape below is a nursery bed of Mr. Wante. Study it and use it to answer questions that follow.





a. If the perimeter of the nursery bed is **72**meters, find the value of **K**.

$K+K+K+3+4K+4m+20m=72m$. M1

$6K+30=72$

$6K+30-30=72-30$.

$6K=42$

$\frac{6K}{6} = \frac{42}{6}$

$K=7$ A1

(2marks)

b. Workout the area of the nursery bed.

Hypotenus

$K+3m$

$7+3m$

$10m$ ✓

$(4\times7)+4$

$28+4$

$32m$ B1

$32m - 20m = 12m$

$\frac{12}{2} = 6m$

$a^2+b^2=c^2$

$h^2+6^2=10^2$

$h^2+(6\times6)=(10\times10)$

$h^2+36=100$

$h^2+36-36=100-36$

$h^2=64$

$\sqrt{h^2} = \sqrt{64}$

$h=8m$ B1

$A=\frac{1}{2}h(a+b)$

$\frac{1}{2}\times8m(20+32)$

$4\times52m^2$

$52m^2$

$\times 4$

$208m^2$ A1

(3marks)

10

31. Two buses **K** and **M** leaves the bus park in intervals of **20** minutes and **30** minutes respectively.

a. After how many minutes will the two buses leave at the same time?

2	20	30
2	10	15
3	5	15
5	5	5
	1	1

M1

$2 \times 2 \times 3 \times 5$

4×15

60 minutes A1

(2marks)

b. If they last leave the bus park at 9:45am. At what time will they leave together again?

60minutes = 1hour. ✓

HRS	MIN
9	45
+1	00 M1
10	45 am A1

(2marks)

32. Given that **Y = X + 2.** Complete the table below correctly. *(5marks)*

X	-1	-2 B1	2	3 B1	-4
Y	1 B1	0	4 B1	5	-2 B1

If $x = -1$

Eqn: $y = x + 2$

$y = x + 2$.

$= -1 + 2$

$y = 1$ ✓

If $y = 0$

$x + 2 = y$.

$x + 2 = 0$

$x + 2 - 2 = 0 - 2$.

$x = -2$ ✓

If $x = 2$

$y = x + 2$

$= 2 + 2$ ✓

$= 4$

If $y = 5$

$x + 2 = y$.

$x + 2 = 5$.

$x + 2 - 2 = 5 - 2$. ✓

$x = 3$ ✓

If $x = -4$

$y = x + 2$.

$= -4 + 2$.

$= -2$ ✓

"GOOD LUCK"

09