WEST NILE PRIMARY SCHOOLS'
HEADTEACHER'S ASSOCIATION (WENIPSHA)
P.7 REGIONAL P.L.E MOCK 2024

MATHEMATICS

Time Allowed: 2Hours 30 Minutes

Theme: "Assessment for confidence building in West Nile P.L.E candidates"

EMIS NUMBER						PERSONAL NO.		

CANDIDATE'S NAME: TR. ISAAC ALPHA TOWN SCHOOL

SCHOOL: WHATSAPP ON 0778068380/0758262422

DISTRICT: BUSINESS CONSULTATION ONLY

SIGNATURE: _____

DISTRICT ID: | | | | |

Read the following instructions carefully

1. This paper has Two Sections **A** and **B**
2. **Section A,** has **20** short answer questions **(40marks)** and
3. **Section B,** has **12** questions **(60marks)**
4. Answer **ALL** questions. All working for both section **A** and **B** must be shown in the space provided.
5. All answers **MUST** be written using a **blue or black ball – point Pen** or **ink.** Any working done in pencil other than graphs and diagram will not be marked.
6. **No calculators** are allowed in the examination room.
7. Unnecessary alteration of work may lead to loss of marks.
8. Do not write anything in the boxes indicated **"FOR EXAMINERS' USE ONLY"**

FOR EXAMINER'S USE ONLY		
Qn. No	**Marks**	**EXRS' NO.**
1-5		
6-10		
11-15		
16-20		
21-22		
23-24		
25-26		
27-28		
29-30		
31-32		
TOTAL		

Turn Over

SECTION A (40MARKS)

1. Work out: 176 – 65

$$\begin{array}{r} 176 \\ -\ 65 \\ \hline 111 \end{array}$$

$\therefore 176 - 65 = 111$

$6 - 5 = 1$
$7 - 6 = 1$
$1 - 0 = 1$

2. Write the expanded number in Roman numerals: 900 + 90 + 9

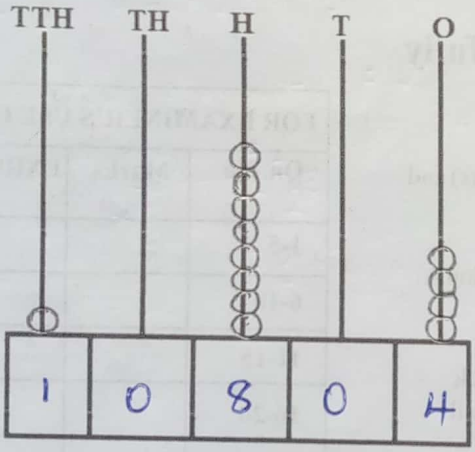
$900 + 90 + 9$

$$\begin{array}{r} 900 \\ 90 \\ +\ 9 \\ \hline 999 \end{array}$$

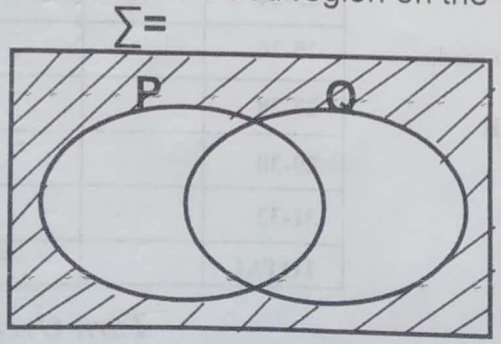
$999 = 900 + 90 + 9$
$\downarrow \quad \downarrow \quad \downarrow$
$CM \quad XC \quad IX$

$\therefore 999 = CMXCIX$

3. Write 10804 on the abacus below.



4. Describe the shaded region on the Venn diagram below.



$(P \cup Q)'$

5. Work out: ⁻7 - ⁻9

$-7--9$

$-7-(-9)$

$-7+9$

$+2$

P.O.W

$-\times- = +$

+ve + + + + + + + + +

-ve − − − − − − − −

+2

6. Find the lowest common multiple of 24 and 42.

LCM of 24 and 42

2	24	42
2	12	21
2	6	21
3	3	21
7	1	7
	1	1

$(2\times2)\times(2\times3)\times7$

$(4\times6)\times7$

24×7

168

P.O.W

$2\overline{)24}$

$\times\ 7$

168

7. Increase 240 in the ratio 4:3

$\frac{4}{3}$ of 240

$\frac{4}{\cancel{3}_1} \times \cancel{240}^{80}$

4×80

320

8. A farmer planted fifteen trees at intervals to cover a total length of 480 metres. Find the distance between the trees.

$n = \frac{\Delta}{I} + D$

$15 = \frac{480m}{I} + D$

$15 - D = \frac{480m}{I} + D - D$

$15 \times I = \frac{480m}{I} \times I$

$15I = 480m$

$\frac{15I}{15_1} = \frac{^{32}480m}{15_1}$

$I = 32m$

9. Find the next number in the sequence.

2, 9, 4, 16, 6, 25, 8, 36

2, 9, 4, 16, 6, 25, 8, 36

+2 +7 +12 +9 +2 +11

$6 + 2 = 8$

$25 + 11 = 36$

10. Given that the sub sets of a set **P** are **{ }, {6}, {5}, {1}, {6,5}, {6,1}, {5,1}** and **{6,5,1}**. Calculate the number of elements in set **P**.

Number of subsets $= 2^n$

Where n = number of elements.

$2^n = 8$

$2^n = 2^3$

$n = 3$ elements

2	8
2	4
2	2
	1

11. A baby slept at 9:30pm and woke up at 2:15am. For how long did the baby sleep?

Duration before midnight

$+2:00$

$-\ 9:30$

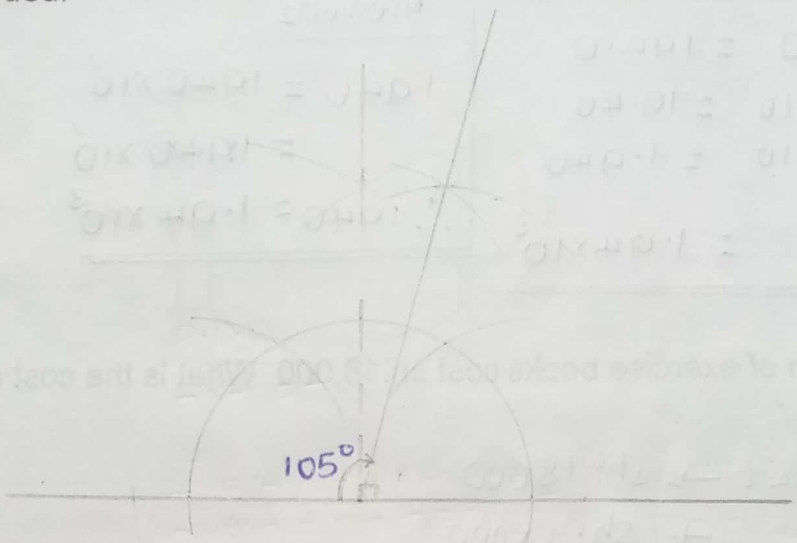
$2:30$

Total duration

H	Min
2	30
+ 2	15
4	45

The baby slept for 4 hours and 45 minutes

12. Using ruler, pencil and pair of compasses only, construct an angle of 105^0 in the space provided.



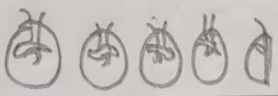
13. If  represent 20 apples, draw pictures to represent 90 apples.

No of pictures

20 apples ⟶ 1 picto

90 apples ⟶ $\left(\frac{90}{20}\right)$ pictos

$4\frac{1}{2}$ pictos

∴ 90 apples = 

14. Geriga was riding at a speed of 60km/h for 3½ hours. What distance did he cover?

$D = S \times T$

$D = 60\text{km/h} \times \frac{7}{2}\text{h}$

$D = \frac{60\text{km}}{1\text{h}} \times \frac{7\text{h}}{2}$

$D = 30\text{km} \times 7$

$D = 210\text{km}$

15. Write 1940 in a standard form.

$1940 \div 10 = 194.0$

$194.0 \div 10 = 19.40$

$19.40 \div 10 = 1.940$

$\therefore 1940 = 1.94 \times 10^3$

Method 2

$1940 = 1940 \times 10^0$

$= 1940 \times 10^0$

$\therefore 1940 = 1.94 \times 10^3$

16. A dozen of exercise books cost sh.18,000. What is the cost of 8 similar books?

12 books → sh. 18000

1 book → $\frac{\text{sh. } 18000}{12}$

8 books → $\frac{\text{sh. } 18000}{12} \times 8$

sh. 3000 × 4

sh. 12,000

17. Solve: $3^{2p} = 81$.

$3^{2p} = 81$

$3^{2p} = 3^4$

$2p = 4$

$\frac{2p}{2} = \frac{4}{2}$

$p = 2$

3	81
3	27
3	9
3	3
	1

18. The interior angle of a rectangular polygon is thrice its exterior angle. Calculate the size of each exterior angle.

Let the ext angle be m

∠EXT	∠int	Sum
m	3m	180°

$m + 3m = 180°$

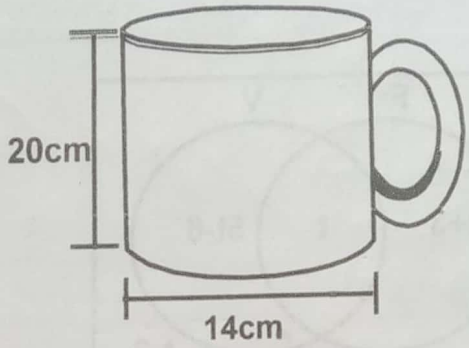
$4m = 180°$

$\frac{4m}{4} = \frac{180°}{4}$

$m = 45°$

$\therefore \angle EXT = 45°$

19. The figure below is a cup whose diameter and height are 14cm and 20cm respectively.



P.o.W

$R = \frac{D}{2}$

$= \frac{14cm}{2}$

$= 7cm$

Find the amount of water in litres that can fill the cup full.

Capacity $= \left(\frac{\text{Volume}}{1000cm^3}\right) L$

$C = \pi r^2 h \div 1000cm^3$

$C = \left(\frac{22}{7} \times 7cm \times 7cm \times 20cm\right) \div 1000cm^3$

$C = (154cm^2 \times 20cm) \div 1000cm^3$

$C = \left(\frac{3080cm^3}{1000cm^3}\right)$ litres

$C = 3.08$ litres

20. A man has UGX.603,000 and exchanged it for Kenya shillings. How much Kenya shillings will he get if 1Ksh. = UGX360?

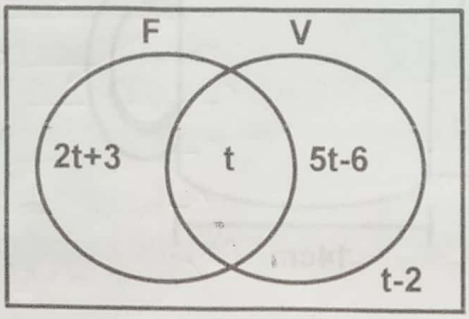
UGX360 → 1Ksh.

UGX603000 → $\left(\frac{UGX\,603000}{UGX\,360}\right)$ Ksh. (1675)

Ksh. 1675

SECTION B (60marks)

21. In a class, **(2t + 3)** pupils play foot- ball **(F)** only, **t** pupils like both football and Volley ball **(V)**, **(5t-6)** pupils play Volley ball only while **t-2** do not play any of the two.



(a) If the **22** pupils do not play volley ball, find the value of **t**.

$2t+3+t-2 = 22$

$2t+t+3-2 = 22$

$3t+1 = 22$

$3t+1-1 = 22-1$

$3t = 21$

$\frac{3t}{3} = \frac{21}{3}$

$t = 7$

(b) How many pupils are in the class?

$n(\varepsilon) = 2t+3+t+5t-6+t-2$

$= (2\times7)+3+7+(5\times7)-6+7-2$

$= 14+3+7+35-6+5$

$= (17+7)+(29+5)$

$= 24+34$

Therefore; 58 pupils are in the class

22. In a taxi park, two vehicles depart at intervals of 30minutes and 40minutes respectively.

(a) After how long will they depart at the same time?

2	40	30
2	20	15
2	10	15
3	5	15
5	5	5
	1	1

$(2\times2)\times(2\times3)\times5$

$(4\times6)\times5$

24×5

120 minutes

60mins → 1hour

120mins → $\frac{120}{60}$ hours

= 2hours

They will depart at the same time after 2hours.

(b) If the two vehicles all depart at the same time at 8:45am, at what time will they depart together again?

H Min
8 : 45
+2 : 00
10 : 45

They will depart together again at 10:45 a.m

23.(a) A man shared certain amount of money among his three children; Jane, Peter and Lucy in the ratio of 3:4:5 respectively. If he gave Jane and Lucy sh.240,000 altogether, how much money did he have?

Total ratio = 3+4+5
= 12 parts

Jane and Lucy = 3+5
= 8 parts

Amount shared

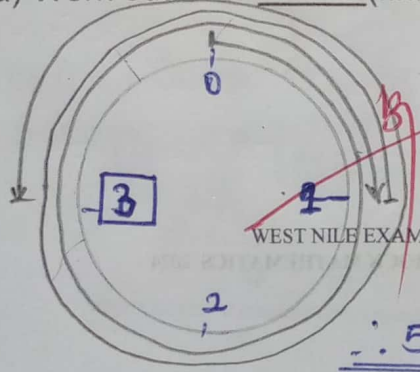
8 parts rep. sh. 240,000
1 part reps. sh. $\frac{240000}{8}$ = 30,000
1 part reps. sh. 30,000

12 parts rep sh. 30000 × 12
sh. 360,000

(c) How much money did Peter get?

1 part reps sh. 30,000
4 parts rep sh. 30000 × 4
sh. 120,000

24.(a) Work out: 5-6=_____(finite 4) on a dial.



∴ 5-6 = 3 (finite 4)

(b) Given that an academic term started on Monday and took 86days. On which day of the week did the term end?

S	M	T	W	T	F	S
0	1	2	3	4	5	6

Day + (86 − 1) days = — (mod 7)
(1 + 85) days = — (mod 7)
86 days = — (mod 7)
(86 ÷ 7) days = — (mod 7)
12 rem 2 = 2 (mod 7)

On Tuesday

25. Vujejo went to Ewafa market and bought the following items; 2½kg of sugar at sh.3600 per kg 500grams of Rice at sh.3200 per kg 18 apples at sh.2000 for every 3 apples 2 litres of cooking oil at sh.10,000

(a) How much did she spend on each item?

Sugar
sh. 3600 × 5/2 = sh. 9,000

Rice
sh. 3200 × 500g/1000g
sh. 1,600

Apples
sh. 2000 × 18/3
sh. 12,000

Cooking oil
Sh. 10,000

(b) If she had a balance of sh.17,400. How much did she have at the beginning?

Total expenditure
sh. 10000
sh. 12000
sh. 9000
+ sh. 1600
sh. 32,600

Amount she had
sh. 32600
+ sh. 17400
Sh. 50,000

26. The table below shows the marks scored by P.7 candidates in a certain primary school in West Nile region. Use it to answer the questions that follow.

Marks scored	90	80	70	60
No. of pupils	P	2	2	3

(a) If 10 pupils sat for the test, find the value of **P**.

$P+2+2+3 = 10$

$P+7 = 10$

$P+7-7 = 10-7$

$P = 3$

(b) Calculate the average mark of pupils who scored above 70.

$$\text{Average} = \frac{\text{Sum of marks}}{\text{No. of pupils}}$$

$$= \frac{80+90}{P+2}$$

$$= \frac{(2\times 80)+(90\times 3)}{3+2}$$

$$= \frac{430}{5}$$

$$= 86$$

$$= \frac{160+270}{5}$$

$$= \frac{430}{5}$$

$$= 86$$

∴ Average mark = 86

27. In a factory, 5600kg of sugar is produced in a day and the factory operates for 20 days in a month.

(a) How many tonnes of sugar does the factory produce in 10 days?

In 1 day → 5600kg

In 10 days → 5600kg × 10

56000kg

1000kg → 1 tonne

56000kg → $\left(\frac{56000}{1000}\right)$ tonnes

= 56 tonnes

(b) If the factory sells a kilogram of sugar at sh.4500, how much money does it get in 2 days?

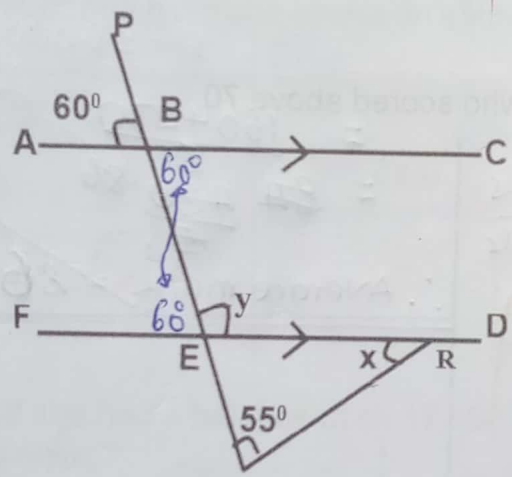
1day → 5600kg
2days → (5600×2)kg
11200kg

1kg → sh-4500
11200kg → sh-4500×11200

sh-50,400,000

It gets sh-50,400,000

28. In the figure below line **AC** is parallel to line **FD**.
<ABP = 60⁰ and **<EGR=55⁰**.



Find the size of:

(a) angle **y**

y + 60° = 180°
y + 60° - 60° = 180° - 60°
y = 120°

(b) angle **X**.

$X + 55^\circ = Y$

$X + 55^\circ = 120^\circ$

$X + 55^\circ - 55^\circ = 120^\circ - 55^\circ$

$X = 65^\circ$

29. (a) The number of pupils in Aringajobi Primary School increased from 600 pupils last year by 20% and then this year by 35%. Find the current number of pupils in the school.

1st increase = 100% + 20%
= 120%

2nd increase = 100% + 35%
= 135%

Current number = 120% of 135% of 600

$= \frac{\cancel{120}^{6}}{\cancel{100}_{5}} \times \frac{\cancel{135}^{27}}{\cancel{100}} \times \cancel{600}^{8}$

$= (6 \times 27 \times 6)$ pupils

$= (36 \times 27)$ pupils

$= 972$ pupils

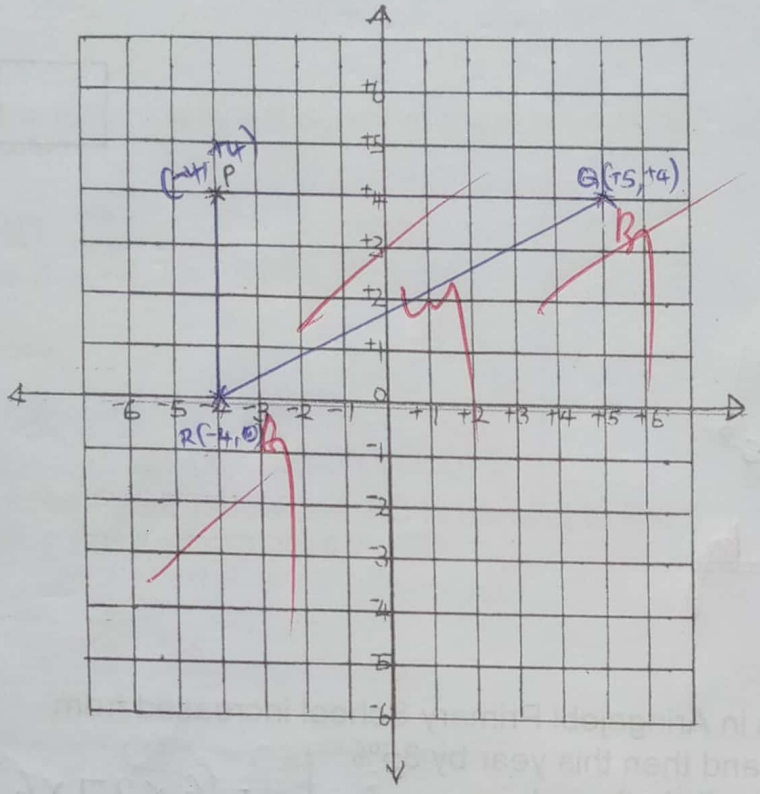
(b). If each pupil paid sh.2000 for registration, how much money was collected by the school?

1 pupil pays sh. 2000

972 pupils paid sh. 2000×972

sh. 1,944,000

30. Use the graph of ordered pair of coordinates below to answer the questions that follow.



a) Identify the coordinates of point **P** on the graph.

P(-4, +4)

b) Plot points Q(+5 , +4) and R(-4, 0) on the graph.

c) Join point **P** to **Q** , **Q** to **R** and **R** to **P** hence name the shape formed.

Right angled triangle

31. The cost of a pineapple is 5 times the cost of a pawpaw and the cost of pumpkin is sh.3000 more than the cost of a pawpaw. If the cost of a pawpaw and a pineapple altogether is as much as the cost of 2 pumpkins.

(a) Find the cost of a pawpaw.

Let the cost of a pawpaw be p

Pineapple	Pawpaw	Pumpkin
5p	p	sh.3000+p

$5p+p = 2(p+sh.3000)$

$6p = 2p+sh.6000$

$6p-2p = 2p-2p+sh.6000$

$4p = sh.6000$

$\frac{4p}{4} = \frac{sh.6000}{4}$

$p = sh.1500$

A pawpaw costs sh.1500

(b) Calculate the cost of a pineapple.

A pineapple $= 5p$

$= 5 \times p$

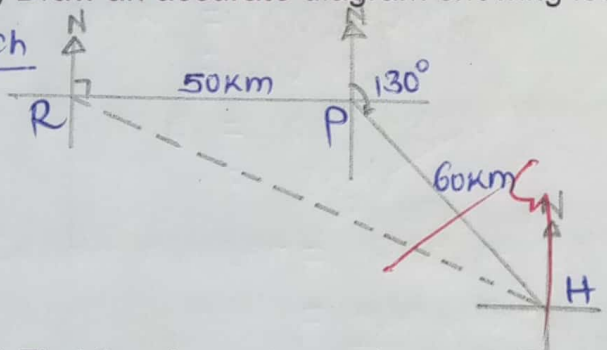
$= 5 \times sh.1500$

$= sh.7,500$

30. Town **P** is **50km** East of Town **R** and Town **H** is **60km** away from Town **P** on a bearing of **130°**. Use a scale of **1cm** to represent **10km**.

(a) Draw an accurate diagram showing locations of the three towns.

Sketch



Length $RP = \left(\frac{50km}{10km}\right)$ cm

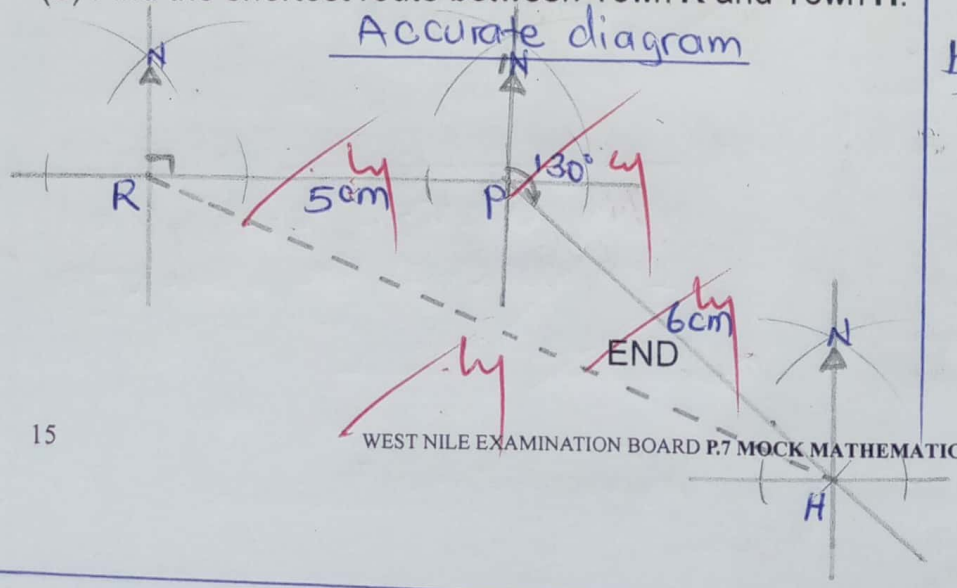
$= 5$ cm

Length $PH = \left(\frac{60km}{10km}\right)$ cm

6 cm

(b) Find the shortest route between Town **R** and Town **H**.

Accurate diagram



b) 1cm = 10Km

10.5cm = $\frac{105}{10} \times 10km$

$= 105km$