DIVINE EDUCATION CENTRE

SPECIAL MOCK ASSESSMENT -2023

MATHEMATICS (ITEM 3 of 3)

Time allowed: 2hours 30 minutes

Random No.						Personal No.		

Candidate's name: .....

Candidate's Signature: .....

District ID:

Read the following instructions carefully:

1. Do not write your **school** or **district name** anywhere on this paper.
2. This paper has two sections **A** and **B**. Section **A** has **20 questions** and **section B** has **12 questions** .This paper has **12 pages** printed altogether.
3. Answer **all** questions. All the working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** working must be done using a **blue** or **black** ball point pen or ink. Any work done in pencil other than graphs and diagrams will **NOT** be marked.
5. **No calculators** are allowed in the examination room.
6. Unnecessary **changes** in your work and handwriting that cannot be easily read may lead to loss of marks.
7. Do not fill anything in the table indicated **"For examiners' use only"** and the boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	**MARKS**	**EXR'S 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: (40 MARKS)

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

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

1- Workout: 12 ÷ 3

2- Write "**Eleven thousand eleven"** in figures.

3- Simplify: 5p – 9d + p + 4d

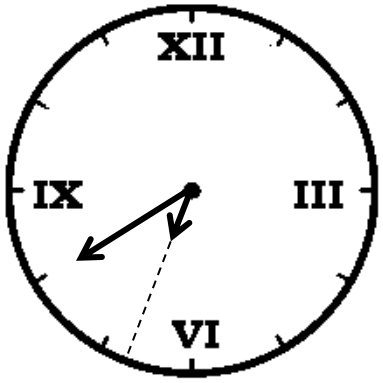
4- Simplify: $\frac{2}{3} - \frac{1}{4}$

5- Given that K = {c, a, t}
List all the subsets in K

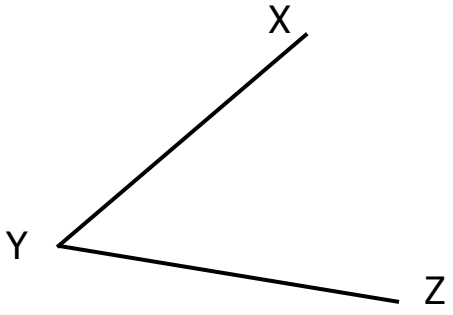
6- Solve the inequality $9 - 3y > 3$

7- Round off 64.97 to the nearest tenth.

8- Nekesa left her home for school in the morning at the time shown on the clock face below.
At what time did she leave her home in the 24 hour clock system?

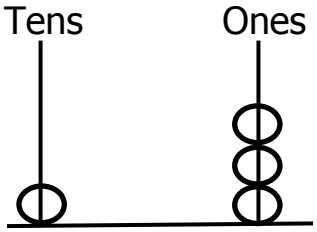


9- Using a protractor, measure angle XYZ below.



10- The cost of 500g of sugar is sh.2500. How much will one pay for 1 ½ kg of sugar?

11- Write the number shown on the abacus below in binary base.



_____

12- Adam was born in the year 500BC and died in 400AD. How old was he by the time he died?

13- In a tin there are 3 black pens and the rest are blue pens. The probability that a black pen is picked at random from the tin is 15%. How many blue pens are in the tin?

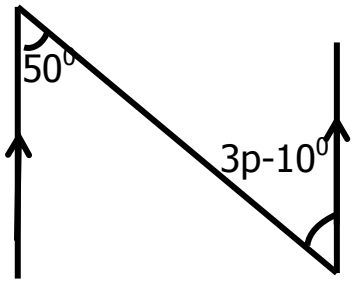
14- Find the next number in the sequence;

-2, -3, -6, -11, -18, _____

15- Express ¾kg as grammes.

16- Find the highest number of pupils who can be shared 36 or 48 books equally and no book remain.

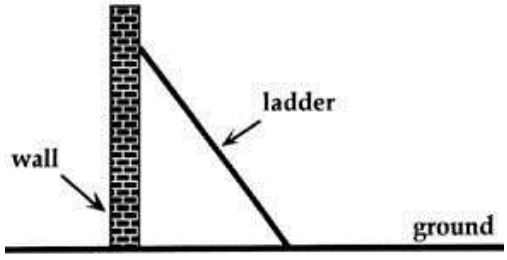
17- Find the value of p in the figure below.



18- James sold his plot of land and was given a bundle of fifty thousand shilling notes numbered consecutively from AX7791690 to AX7791789. How much did he sell his plot of land?

19- Monica got a loan of sh. 400,000 from a saving group which gives an interest rate of $7\frac{1}{2}$ % per month.
Calculate the simple interest she paid at the end of 4 months.

20- Amin placed a ladder of 5metres long on a wall of 4metres high as shown below. Calculate the ground distance from the wall to the ladder.



SECTION B :60 MARKS

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

21- (a) Workout: $122_{\textbf{three}}$ x 4 ***(02marks)***

(b)Given that the value of a digit k in a number $k42_{\textbf{seven}}$ is 147. Find the value of k.
(02marks)

22- Using a ruler, a pencil and a pair of compasses only,

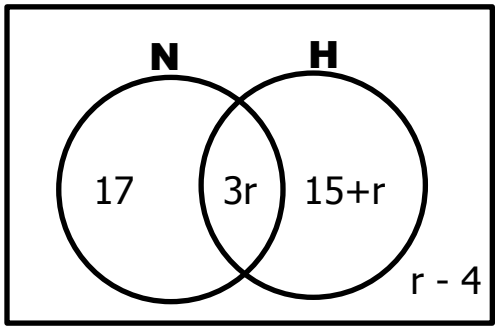
(a) Construct a rhombus PQRS where line PQ = 5.5cm and angle PQR = 120^0
(04marks)

(b) Measure diagonal SQ= ……cm ***(01mark)***

23- (a)Find the difference between the values of 3 and the place value of 6 in the number 3706. ***(02marks)***

(b)Write 78.24 in standard form ***(02marks)***

24- The venn diagram below represents the number of tourists who visited source of the Nile (N) and Hot loaf (H).

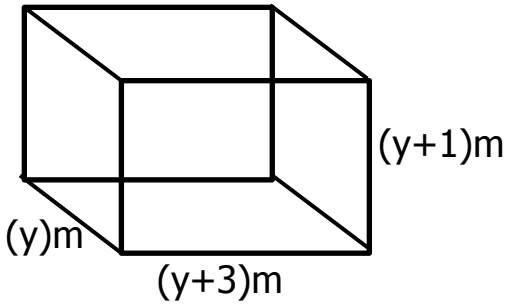


(a) If sixty tourists visited either source of the Nile (N) or Hot loaf (H), calculate the total number of tourists represented in the venn diagram above. ***(03marks)***

(b) Find the probability of selecting a tourist at random who visited neither source of the Nile nor Hot loaf. ***(02marks)***

25- A wire of length 76metres was curved into a cuboid as shown below.

(a) Find the actual length of the cuboid formed. ***(03marks)***



(b) Calculate its base area ***(02marks)***

26- A hawker went for shopping and bought shirts, pairs of shoes and trousers in the ratio of 5:2:3 respectively. He bought 12 less pairs of shoes than shirts. If he sold each trouser at sh.20,000 and each shirt at sh. 15,000; calculate the hawker's total expenditure if the cost of each pair of shoes was twice the cost of each trouser.
(06marks)

27- Given that PFy = $\{2_1, 3_1, 3_2\}$ and $FF_{30} = \{2_1, 3_1, k\}$

(a) Find the value of: ***(2marks@)***

(i) Y

(ii)K

(b)Without prime factorizing, find the HCF of PFy and PF_{30} ***(01mark)***

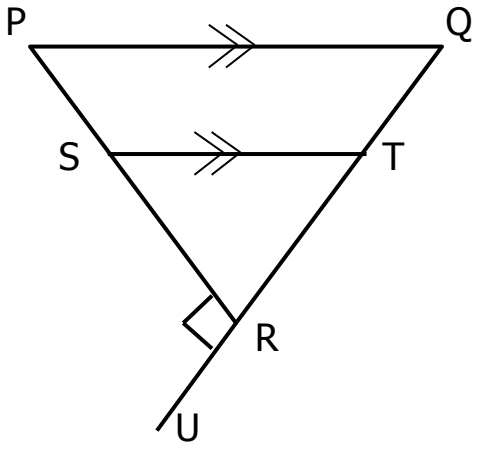
28- A wheel of radius 42cm was cut into a straight pole. The length from the shop to the school was 50 times the length of the pole. Calculate the length in metres from the school to the shop. ***(06marks)***

29- A car moved a distance of 168km in 3 ½ hours.

(a) Calculate the speed the car was using. ***(02marks)***

(b) If the car used 4 litres of fuel to cover $\frac{2}{3}$ of the journey covered in one hour, how much fuel will be needed by the same car to cover a journey which takes 4 hours while moving at the same speed? ***(03marks)***

30- In the diagram below, line PQ is parallel to line ST. Angle PQR is twice angle RPQ and angle URP is a right angle.



Find the size of angle:

(a) PQT ***(03marks)***

(b) QTS ***(02marks)***

31- At Mulango hospital, $\frac{1}{3}$ of the people who were immunized were women, $\frac{2}{5}$ of the remainder were men and the remaining 30 were children.

(a) What fraction of the people were children? ***(02marks)***

(b) How many people were immunized altogether? ***(03marks)***

32- The table below shows the number of pupils and the marks they scored in a mathematics test.

Number of pupils	3	h	2	1
Marks scored	70	40	30	90

If their average mark was 52, calculate the total number of pupils who did the test. ***(05marks)***

****END****