



SURE KEY EXAMINATIONS BOARD

PRE PLE EXAMINATION SERIES TWO

2022

MATHEMATICS

Time Allowed: 2 hours 30 minutes

EMIS No.						Personal No.		

Candidate's Name:

Candidate's Signature:

School Name:

District Name:.....

Read the following instructions carefully:

1. Do not forget to write your **school** and **district name** on this paper.
2. This paper has two sections: **A** and **B**.
Section **A** has **20** questions and Section **B** has **12** questions. The paper has **15 printed pages** 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 easily be read may lead to loss of marks.
7. Do not fill anything in the table indicated:
"For Examiners' Use only" and boxes

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		

SECTION A: 40 MARKS

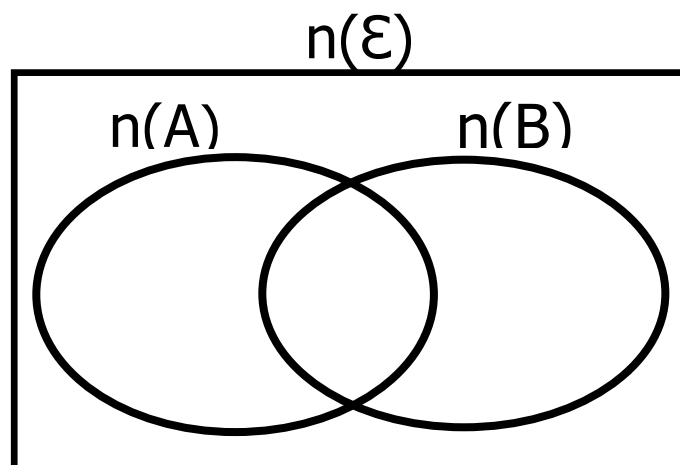
Answer **all** questions in this Section

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

1. Workout: $49 \div 7$.

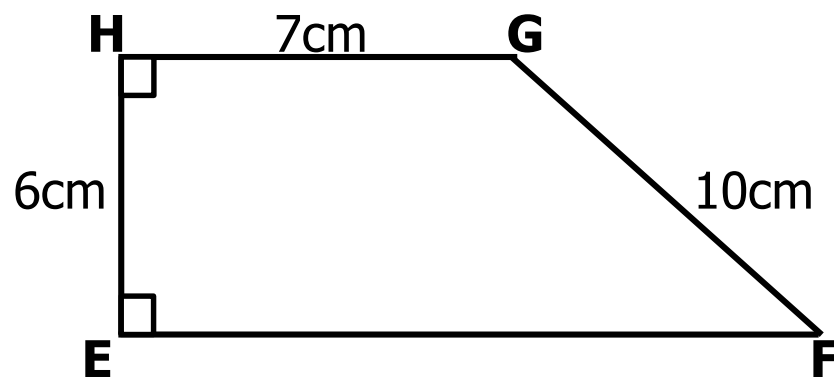
2. Write CDVIII in Hindu Arabic Numerals.

3. Given that; Set A = {s, u, n, d, y}, Set B = {m, o, n, d, a, y}.
Represent the information on the Venn diagram below.



4. How many groups of a hundred are there in the total value of digit 3 in the number 973604?

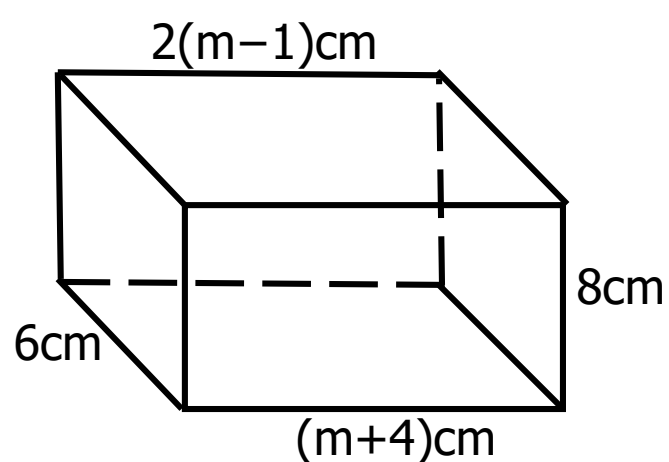
5. The area of the trapezium **EFGH** shown below is 66cm^2 . What is the length of **EF**?



6. A football match started at 2:45 p.m. After 45 minutes, there was a 15 minutes break. It then took 50 minutes to end. At what time in 24 hour system did the match end?
7. What is the next number in the pattern below?
- 85, 66, 49, 36,
8. Maria bought 160 mangoes at sh.1,000 each. She paid sh.20,000 for transport to the market. She sold the mangoes and made a 60% profit. What was the selling price of each mango?

9. Round off 19.347 to the nearest hundredths.

10. Calculate the total length of all the edges in the figure below.



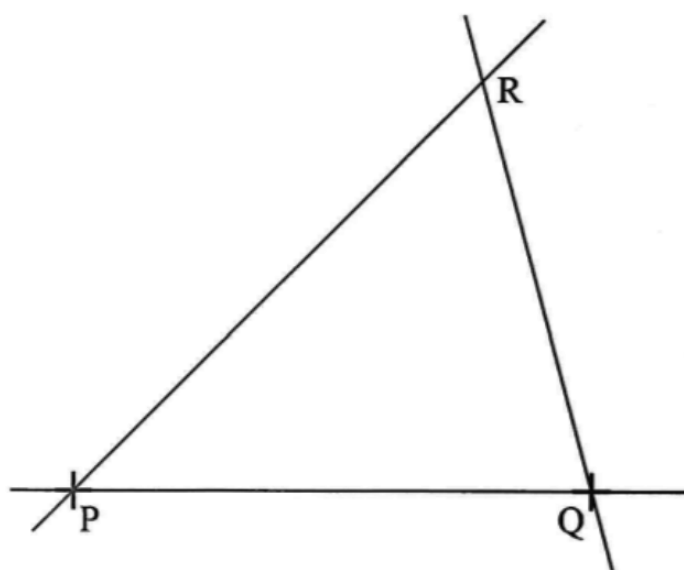
11. Write the expanded number below as a single figure in base five.

$$(3 \times 5^2) + (2 \times 5^1) + (1 \times 5^0)$$

12. Three bells ring at intervals of 30 minutes, 40 minutes and 48 minutes. The bells rang together at 1230HRS. What time in a.m./p.m. will they ring together again?

13. In a certain school, the number of girls was 240 and the total number of pupils was 540. What was the ratio of boys to girls in the school?

14. Triangle PQR below has been drawn accurately. Measure angle PQR.



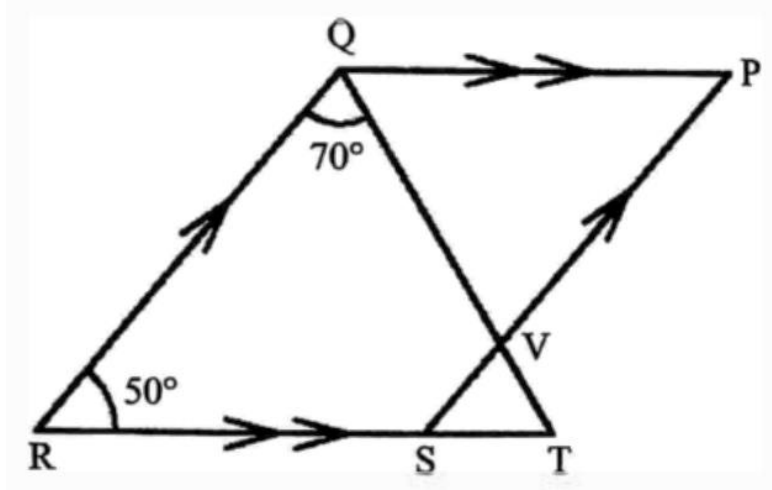
15. A rectangular brick weighs 5kg 750g. how many such bricks can be loaded onto a lorry which carries 4.6 tonnes?



16. Electricity poles are fixed at equal intervals of 50 metres apart. A total of 51 poles are used along one side of a street in a town. What is the total distance between the first and last pole?

17. Workout: $7\frac{1}{2} + 1\frac{1}{4}$.

18. In the figure below, PQRS is a parallelogram. Lines QR and PS are Parallel. Angle RQT = 70° and angle QRS = 50° .



What is the size of angle PQT?

19. 24 men working at the same rate can finish a job in 6 days. 8 men failed to turn up to do the job. How many more days will the remaining men working at the same rate take to finish the same job?

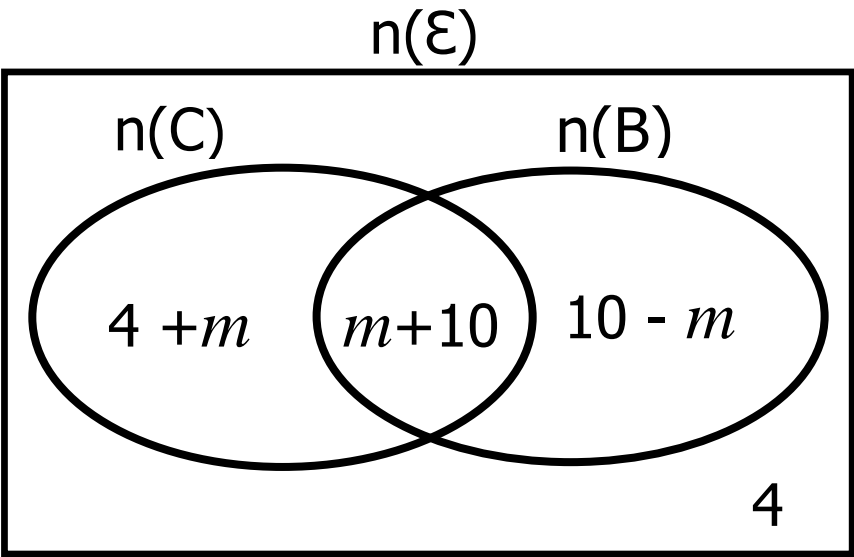
20. Solve: $40 - 3(8 - 5x) = 46$.



SECTION B: 60 MARKS

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

21. At a party, 26 guests took Chicken (C), some took Beer (B) while 4 guests took neither of the two dishes as shown in the Venn diagram.



(a) How many guests took only one type of dish? (03 Marks)

(b) Find the total number of guests that attended the party. (02 arks)

22. (a) Fill in the missing numbers in the boxes to complete the addition statement below. (03 Marks)

$$\begin{array}{r} \square \ 7 \ 7 \\ + \ 2 \ 8 \ \square \\ \hline 9 \ \square \ 2 \\ \hline \end{array}$$

- (b) Simplify: $k^3 \times k^5 \div (k^2 \times k^4)$ (02 Marks)

23. Wudanga remained with sh.3,100 on the 20,000 shillings note she was sent with to the nearby shop to buy the items shown in the table below.

Complete the table. (05 Marks)

Item	Unit cost	Total cost
500grams of sugar	sh 4,000 per kg	sh.
2 bars of soap	sh. a bar	sh.
..... litres of milk	sh. 1,200 per litre	sh. 1,800
Total Expenditure		sh.

24. (a) Workout: $0.63 + 45.4 - 0.07 + 0.2$.

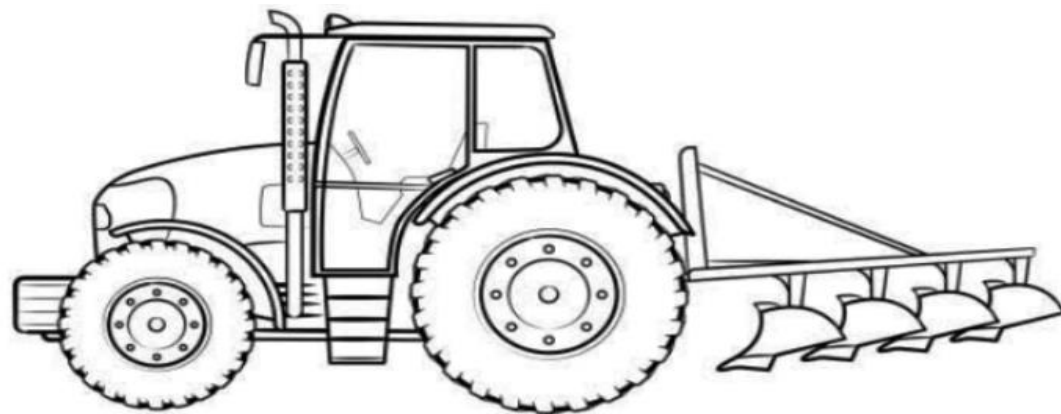
(02 Marks)

(b) There are 600 animals in a farm. 0.32 are cows, 0.11 are sheep and the rest are goats. How many goats are in the farm?

(03 Marks)



25. The tractor below has a front wheel of circumference of 1.2m and a rear wheel of 1.6m. It is going to be used to dig a straight road of 0.768km.



How many more revolutions will the front wheel make than the rear wheel?

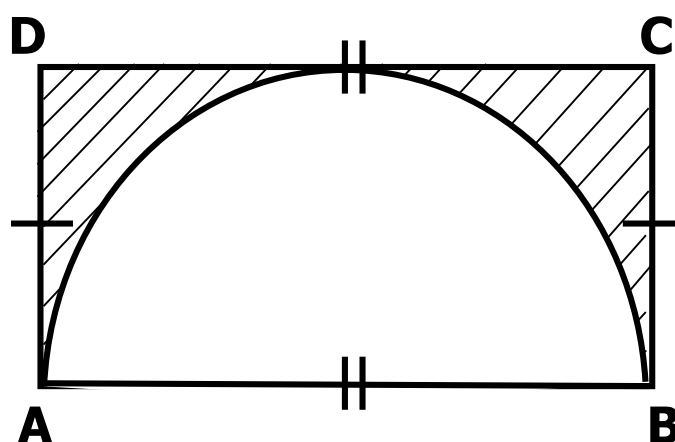
(05 Marks)

26. (a) Using a pair of compasses, a ruler and a pencil only, construct triangle LMN where $LM = 8\text{cm}$, angle $NLM = 45^\circ$ and angle $LNM = 105^\circ$. Drop a perpendicular bisector from N to meet line LM at point O. (04 Marks)

- (b) Find the area of the triangle LMN. (02 Marks)



27. The diagram below shows a semicircle enclosed in a rectangle ABCD. The area of the shaded area is 21m^2 and length AB is twice BC.



- (a) Calculate the diameter of the semicircle. (04 Marks)
(Use $\pi = \frac{22}{7}$)

- (b) Find the area of the rectangle ABCD. (02 Marks)

28. The table below shows the quantity of maize flour consumed in a school for one week. The quantity for Wednesday is not indicated.

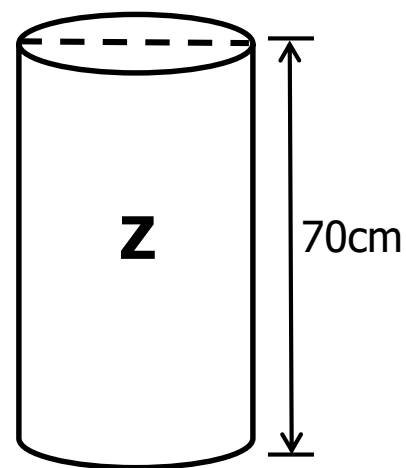
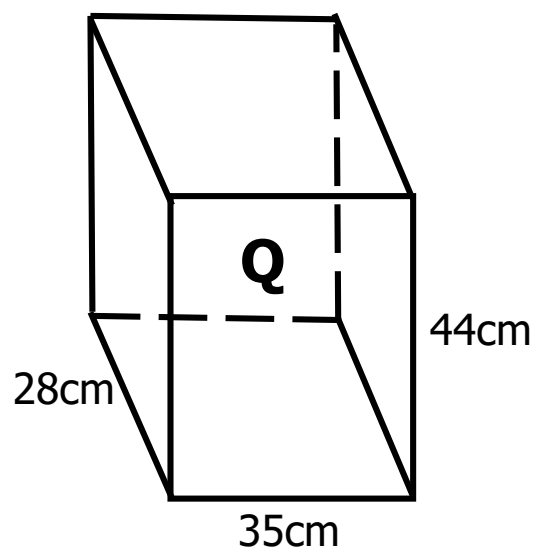
Day	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Mass in kg	40	55	_____	30	47	30	48

The average mass of the flour consumed that week was 45kg.
What was the quantity of flow consumed on Wednesday?
(04 Marks)



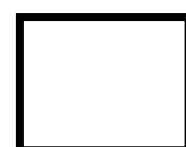
29. In a class of 126 candidates, $\frac{5}{9}$ of them are in Stream A and the rest are in Stream B. If $\frac{1}{5}$ of the candidates in Stream A are girls and 25% of the candidates in Stream B are boys. How many more boys than girls are in the class?
(05 Marks)

30. The petrol tanks below hold the same capacity when completely full.
Use them to answer the questions that follow.

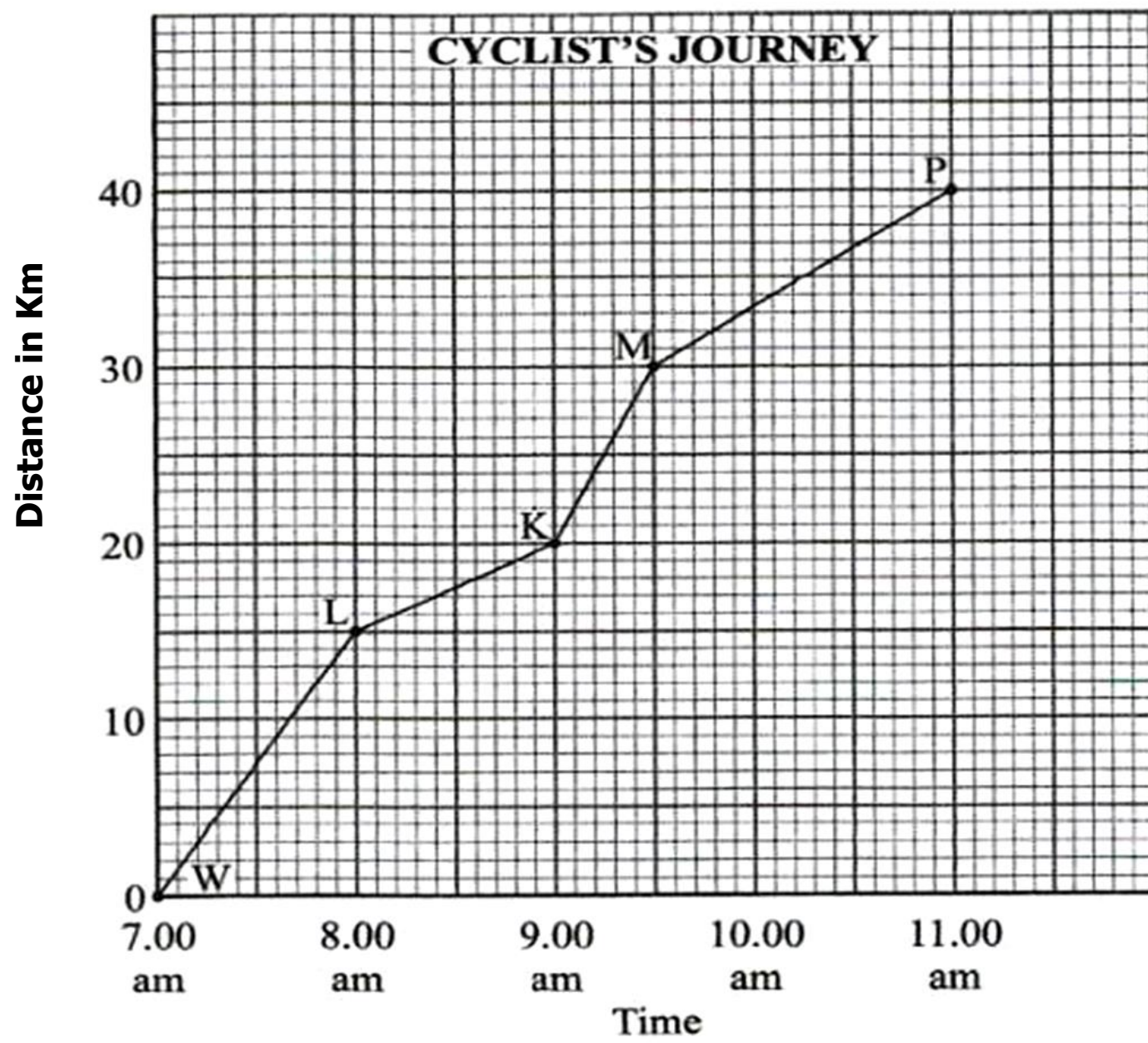


- (a) Find the radius of tank **Z**. (03 Marks)

- (b) How many litres does tank Q hold when half full? (02 Marks)



31. The graph below represents a journey of a cyclist travelling from town **W** to town **P** through towns L, K and M.



Between which two towns was the cyclist travelling at the highest speed? (05 Marks)

32. A book costs sh.P, a pen costs $\frac{1}{4}$ of the cost of a book and a ruler costs twice the cost of a pen. If Opio paid sh.1,050 for the three items, find the cost 3 books. (04 Marks)



