



# GOMBE JUNIOR SCHOOL

## GROUP WORK SET TWELVE

### MATHEMATICS - 2022

*Time Allowed: 2 hours 30 minutes*

Index No.

Random No.						Personal No.		

Candidate's Name: .....

Candidate's Signature: .....

School Random No. ....

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 to both sections **A** and **B** must be written in the spaces provided.
4. All working **must** be done using a **blue** or **black** ball point pen or ink. Any work written 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**.
6. Do not fill anything in the table indicated:  
**"For examiner's use only"** and the boxes inside the question paper.

#### FOR EXAMINER'S USE ONLY

Qn. No	MARK	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

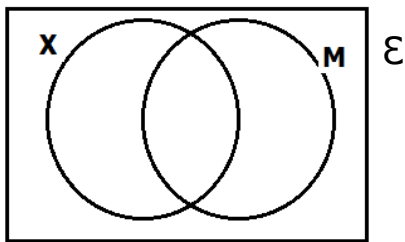
Answer **all** questions in this Section

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

1. Work out:  $1101_{\text{two}} + 110_{\text{two}}$ .

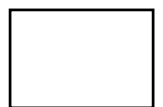
2. Write  $8\frac{1}{3}\%$  as a fraction in its simplest form.

3. On the Venn diagram below, shade either set X or set M.

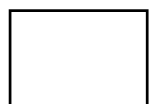


4. Simplify:  $5p - (-3 + p)$

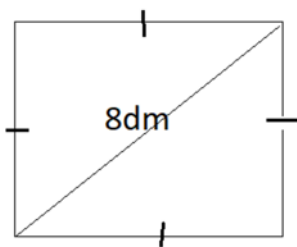
5. Sarah had  $\frac{3}{4}$  of a cake. She gave  $\frac{1}{9}$  of it to Mike, what fraction of the cake did she remain with?



6. Sarah withdrew 100 ten thousand shilling notes numbered consecutively up to AP534300. Find the registration number of the first note.
7. Solve for p:  $4(4p - 2) - 4(2p + 6) = 16$
8. A man's stride is 30cm. How many strides does he have to make to cover a distance of 150 metres?
9. The length of a road leading to Gombe Junior school is 1.8 km. Poles were fixed in straight lines on both sides of the road at intervals of 20 metres.  
How many poles were used altogether?
10. A bucket full of sand weighs 22.5kg. When it is half full of sand, it weighs 12.5kg. Find the weight of the empty bucket.



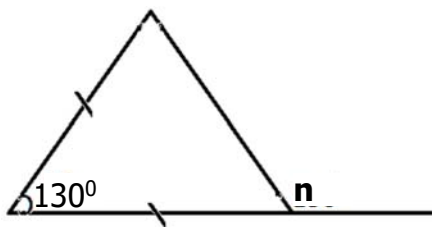
11. The figure below is a square of diagonal 8dm. Find its area.



12. A wheel of a bicycle has a radius of 7cm. How many revolutions will the wheel make in a distance of 55 metres? (Use  $\pi = \frac{22}{7}$ )

13. Decrease 4800 by  $12\frac{1}{2}\%$

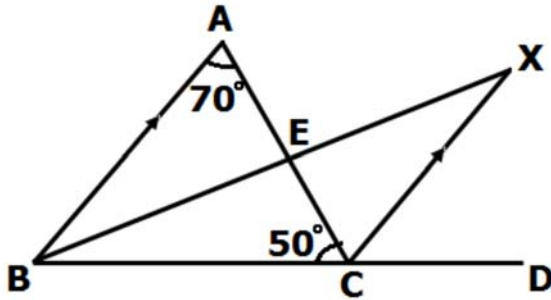
14. What is the value of **n** in the figure below?



15. Solve for r:  $3r^2 - 2 = r^2$



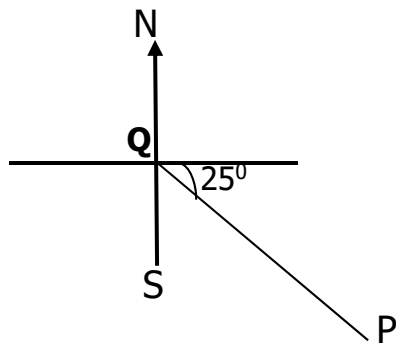
16. In the figure below, BCD is a straight line. Line BX bisects angle ABC. Line AB is parallel to line XC. Angle BCE =  $50^\circ$  and angle BAC =  $70^\circ$ .



Find the size of angle **CEX**

17. A bus broke down after covering  $\frac{5}{7}$  of the journey. The remaining distance to complete the journey was 140km. How long was the journey?
18. The base area of a rectangular tank is  $1500\text{cm}^2$  and its height is 40cm. Calculate its volume in litres.

19. In the figure below, find the bearing of Q from P.



20. A piece of wire measuring 88cm was used to make a circle. Calculate the area of the circle made. (Use  $\pi = \frac{22}{7}$ )



**SECTION B: 60 MARKS**

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

21. A trader banked money in Centenary bank which offers  $2\frac{1}{3}\%$  interest rate per year. If his account had an amount of sh 181,400 after a period of 4 months. Calculate the money he banked. (04 marks)

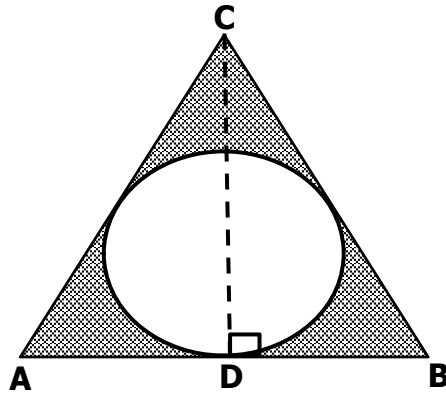
22. a) A cylindrical tin of radius 7cm contains **3080cm<sup>3</sup>** of cooking oil. Kato used **2156cm<sup>3</sup>** of the cooking oil. What is the height of the cooking oil remaining in the tin? (Use  $\pi = \frac{22}{7}$ ) (03 marks)

- b) Kato poured the remaining cooking oil into a rectangular tin with base area **77cm<sup>2</sup>**. What is the height of the oil in the tin? (02 marks)



23. Milk was mixed with water to make tea. If 18 litres of milk was used and this was 80% more than the amount of water in the tea, how much tea was prepared? (06 marks)

24. The diagram below shows a circle inscribed in a triangle. Line  $AB = 24\text{dm}$ ,  $CD = 18\text{dm}$ .



Given that the area of the shaded part is  **$62\text{dm}^2$** , calculate the radius of the circle.  
(Use  $\pi = \frac{22}{7}$ ) *(05 marks)*



25. Peter packs milk in packets of 750ml each and then delivers 285 litres to the nearby dairy for sale.

(a) How many packets of milk does Peter deliver to the dairy? *(02 marks)*

- (b) If Peter rides on a motorcycle while taking the milk to dairy travelling at a speed of  $27\text{km/h}$  for two hours, at what speed must he ride back to cover the same distance in  $1\frac{1}{2}$  hours? *(03 marks)*



26. The current water meter reading of Mr. Mugaga is CE009827 and the initial reading was CE009727. NWSC charges sh2,800 for every unit and a VAT of 20% is levied on the bill.

(a) Calculate Mr. Mugaga's water bill. *(03 marks)*

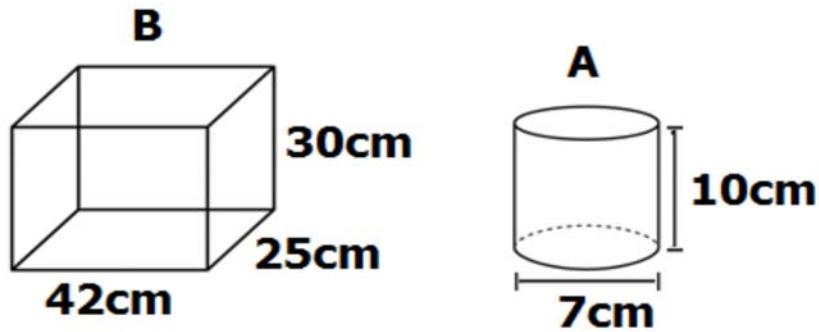
- (b) If each unit of water contains fifty 20-litre jerrycans and Mugaga sells each jerrycan at sh 200, how much would he earn from the units? *(02 marks)*

27. Two towns A and B are 180km apart. Opolot leaves town A for town B at 7:00a.m. travelling at an average speed of 40km/h. Apio leaves town B for town A at the same time travelling at an average speed of 30km/h.

a) At what time did the two travellers meet? *(03 marks)*

b) How far from town A did they meet? *(02 marks)*

28. In a factory, tins (A) were packed in box (B).



a) How many tins (A) will completely fill box (B)?

*(02 marks)*

(b) Calculate the volume of the space left unoccupied? (Use  $\pi = \frac{22}{7}$ )

*(03 marks)*



29. Last year, 40% of a school's enrolment was boys and there were 720 girls. This year, the number of girls increased by 15% and the number of boys increased in the ratio of 9:8. Find the total number of pupils in the school this year. *04 marks)*

30. a) David paid sh 3,800 for a book using coins of sh 500 and sh 200. He paid a total of 13 coins. How many coins each of sh 500 did he have? *(03 marks)*

b) Kato bought a tray of 30 eggs at sh 300 each egg. Some eggs got broken and he sold the remaining eggs at sh 400 each. He realized a loss of sh 600. Calculate the number of eggs that got broken. *(03 marks)*



31. During an interview, 5 marks were awarded for every correct answer given and two marks were deducted for every wrong answer given. The interview comprised twenty questions.

a) If Alice passed only 16 questions, how many marks did she get? *(02 marks)*

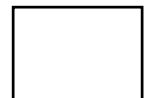
b) If Moses scored 79 marks, how many questions did he answer correctly? *(03 marks)*

32. a) Using a ruler , a pencil and a pair of compasses only , construct a quadrilateral ABCD where line  $AB=7\text{cm}$ , angle  $ABC=BAD=60^\circ$  and  $AD= BC= 3.5\text{cm}$ .  
(04 marks)

- b) Measure the length DC in cm

(01 mark)

.....



**END**