

KOLFRAM EDUCATIONAL SERVICES KAMPALA

NATIONAL MOCK EXAMINATION CHAMPIONSHIP



2024

MATHEMATICS

Time allowed: 2hours 30minutes

Index Number:

Random Number						Personal No.		

Candidate's Name:

Candidate's Signature:

School Name:

District Name:

DO NOT OPEN THIS BOOKLET UNLESS YOU ARE TOLD TO DO SO

Read and follow these instructions carefully

1. This paper has **two** sections: **A** and **B**. Section **A** has **20** questions and section **B** has **12** questions. The paper has **8** printed pages.
2. Answer **all** questions. **All** answers to both sections A and B must be shown in the spaces provided.
3. All answers **must** be written using a **blue** or **black** ball point pen or ink. Any answer written in pencils other than on graphs and diagrams will **not** be marked.
4. No calculators or **electronic** pens are allowed in the examination room.
5. Unnecessary **changes** in your work and handwriting that cannot be read easily may lead to **loss of marks**.
6. Do not fill anything in the table indicated: "**FOR EXAMINERS' USE ONLY**" and boxes inside the question paper.

FOR EXAMINER'S 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		

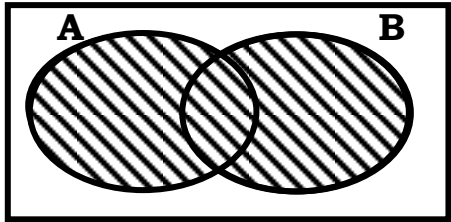
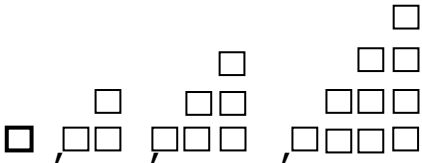
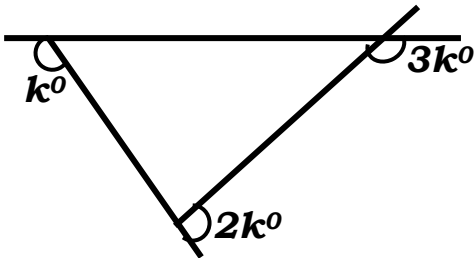
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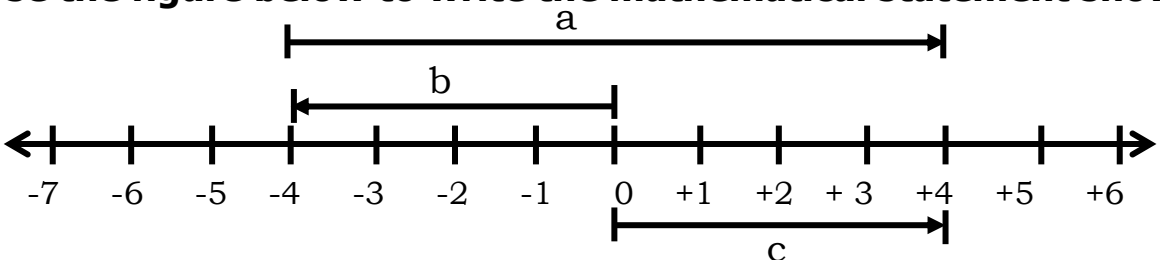
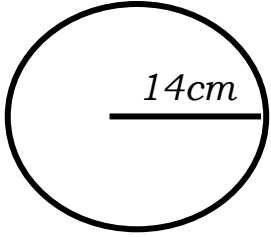
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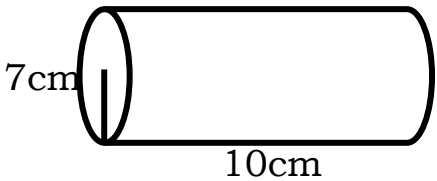
Turn Over

SECTION A (40 marks)

(Question 1 to 20 carries 1 mark each)

1.	Work out: <input type="text"/> $\div 5 = 25$	2.	Describe the shaded region on the Venn diagram below. 
3.	Write in figures: One hundred forty two thousand, sixty one.	4.	Simplify: $\frac{5}{12} + \frac{1}{12}$
5.	How many squares are in the next grouping in the pattern?  , _____		
6.	A church was built in MDCCLXVII . Write this year in Hindu Arabic numeral.	7.	Maria will celebrate her birthday next week. What is the probability that she will celebrate it on the weekend?
8.	Find the value of k in the diagram below. 	9.	Ritah had a debt of Sh. 17,000 from each of her 3 friends. She received Sh. 53,000/= as her salary and paid all the debts. Find Ritah's financial stand after paying off her debts.

10.	<p>Use the figure below to write the mathematical statement shown.</p> 		
11.	<p>The number of children at Praise Primary School- Hoima increased from 525 in 2023 to 1575 in 2024. In which ratio did the number increase?</p>		
12.	<p>Find the circumference of the figure shown below. (use π as 3.14)</p> 	13.	<p>Given that set $A = \{14, 8, 5, 6, 6, 8, 9\}$, find the median of the set A.</p>
14.	<p>Doreen deposited Sh. 60,000 for 8 months in Kesk Bank which gives a rate of 10% per year. Calculate her simple interest.</p>	15.	<p>The LCM of two numbers is 72. If one of the numbers is 6 and their HCF is 3, find the second number.</p>

16.	Find the volume of the cylinder given below. 	17.	Solve for x: $\frac{3}{x} = 4 \pmod{5}$
18.	If $a = 7$, find the value of $a^2 + a$	19.	Express 15 hours as a ratio of a day.
20.	With a help of a well sharpened pencil and a protractor, draw an angle of 120° .		

SECTION B (60 MARKS)

21.	Given that $\varepsilon = \{\text{All natural numbers from 0 to 20}\}$ Set B = $\{\text{Even numbers between 1 and 20}\}$ Set C = $\{\text{Prime numbers between 0 and 20}\}$ (a) Draw a Venn diagram to show the above information. (3 marks)		
(b)	Find $n(B \cup C)$ (2 marks)	(c)	Find $n(B \cap C)$ (1 mark)

22. Below is a calendar of **May** for a certain year. Use it to answer the questions that follow.

SUN	MON	TUE	WED	THUR	FRI	SAT
			1.	2.	3.	4.
5.	6.	7.	8.	9.	10.	11.
12.	13.	14.	15.	16.	17.	18.
19.	20.	21.	22.	23.	24.	25.
26.	27.	28.	29.	30.	31.	

- a) If all the dates with prime numbers were rainy day, find the probability that the farmer planted his seeds on rainy day in that month. (2 Marks)

Using the formula $n(n+1)$ to obtain rectangular numbers, circle all the rectangular numbers from the calendar above. (2 Marks)

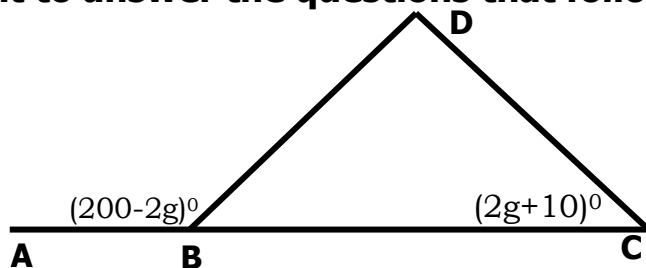
23. Tr. Ojok grouped his learners in nines and seven learners remained a group but when he grouped them in eights, 4 learners didn't have group.

- | | |
|---|---|
| <p>(a) How many learners are in his class altogether? (2 Marks)</p> | <p>b) If the learners were grouped in fours, how many groups were formed? (2 marks)</p> |
|---|---|

- | | |
|---|---|
| <p>24. (a) workout $\sqrt{0.64} + \sqrt{0.36}$ (3 Marks)</p> | <p>b) Express $33\frac{1}{3}\%$ as a decimal fraction. (2 Marks)</p> |
|---|---|

25.	The table below shows how a man spends his monthly income. Use it to answer the questions that follow.		
	Feeding	Others	Rent
	Sh. 300,000	240,000	25%
(a)	How much money does he spend on rent? (2 Marks)	b)	Show the above information in a circle of radius 3cm. (3 Marks)
26.	Using a pair of compasses, a ruler and a pencil only, construct a parallelogram ABCD where AB=7cm, BC= 4cm and diagonal AC= 10cm. (4 Marks)		
(b) (i)	Measure the length of the diagonal BD. (1 Mark)	(ii)	Measure the angle DAC. (1 Mark)
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27. In the figure below, angle BCD is twice angle DBC. Study it carefully and use it to answer the questions that follow.



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|-----|--|----|---------------------------------------|
| (a) | Calculate the value of g . (3 marks) | b) | Find the size of angle BDC. (2 marks) |
|-----|--|----|---------------------------------------|

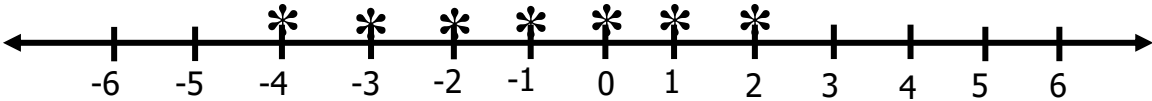
28. At Motherwell Junior School, the bell for lower classes rings in the interval of 30 and that of upper primary rings in the interval of 40 minutes respectively.

- | | | | |
|-----|--|----|--|
| (a) | After how many hours will the two bells be rung again? (3 marks) | b) | If the bells were first rung together at 10:30 a.m. At what time will they be rung together again? (2 marks) |
|-----|--|----|--|

29. Bernard bought the following items for Easter Day celebration.

- 2 broilers for sh. 7500 each.
- 3 kg of rice for sh. 3000 per kg.
- 24 bottles of soda for sh. 18000.
- 1 $\frac{1}{2}$ litres of cooking oil for sh. 4000 per litre

- | | |
|-----|---|
| (a) | Work out his total expenditure. (4 marks) |
| (b) | If he used one note and was given a change of sh. 2000, what denomination of the note did he give to the trader? (1 mark) |

30.	Solve for h: $\frac{1}{2} (4h + 7) + \frac{1}{4} (4h-6) = 20$ (3 Marks)	
(b)	Write an inequality whose solution set has been shown on the number line below. (1 mark)	
		
31.	The distance all round a constructed regular hexagon in a circle is 42cm	
(a)	Find the:	(ii) Area of the circle. (2 marks)
(i)	Diameter of a circle (1 mark)	
	Workout the ratio of exterior angle to interior angle of the constructed polygon. (3 marks)	
32.	A trader bought a gross of apples at Sh. 1,000 each apple and he later sold half of apple bought at Sh. 2,500 a pair of apples. The remaining apples were sold at Sh. 1,500 each apple. Calculate the trader's percentage profits. (5 Marks)	
	<div>Game over</div>	