

KISORO DISTRICT ACADEMIC BOARD
PRIMARY LEAVING MOCK EXAMINATION, 2023
MATHEMATICS

Time Allowed: 2 hours 30 minutes

Random No.					Personal No.		

Candidate's Name:

Candidate's Signature:

District ID No:

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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. The paper has 8 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 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		

SECTION A : 40 MARKS

Answer all questions in this section.

Questions 1 to 20 carry two marks each.

1. Work out:
$$\begin{array}{r} 30 \\ \times 3 \\ \hline \end{array}$$

2. Simplify: $6t - 2(4 - t)$

3. The LCM of two numbers is 72 and their GCF is 6. If one of the numbers is 18,

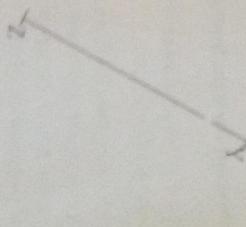
find the second number.

4. Correct 95.752 to one decimal place.

5. Calculate the mean of the recorded patients who tested malaria last week.

Days of the week	Number of patients recorded
Tuesday	
Wednesday	
Thursday	

6. Using a ruler, a pencil and a pair of compasses only, construct a perpendicular line bisector from X to meet YZ at W.



7. How many cups of tea each measuring 280cm^3 can be obtained from 2.8 litres

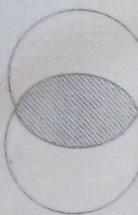
8. Auntie has bank notes numbered from AX0480 to AX04889. If each note is worth Shs. 1000 in value, how much money does she have?

9. Describe the un-shaded region in the

venn diagram below.

$n(X)$

$n(Y)$



10. Convert 0.3636..... to a rational number.

11. Given that $X = 2Y - 1$, complete the table below.

X	1	3	7	<hr/>
Y	1	2	<hr/>	0

12. Write the expanded numeral below in words.

$$(3 + 400 + 90000)$$

13. Express the afternoon time shown on the clock face below in a 24-hour clock system.



14. What amount of water when decreased by 10% becomes 360 litres?

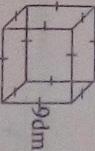
What amount of water when decreased by 10% becomes 360 litres?

15.

- The average weight of three pupils is 16kg. If the heavier pupil weighs 8kg, work out the total weight of the other two pupils.

16.

- Calculate the total surface area of the cube below.

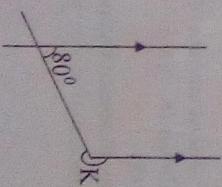


17.

- The sum of p , $p + 2$ and $p + 4$ consecutive even numbers is 36. Find the value of p .

18.

- Work out the size of angle marked K in degrees.



20. If today is Wednesday, what day of the week will it be 40 days from today?

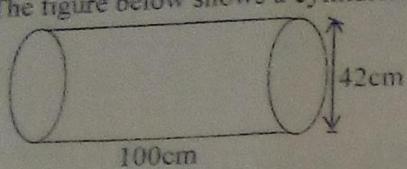
- Given that $m = \frac{1}{4}$ and $p = \frac{3}{8}$
Solve for the value of m
 p

SECTION B : 60 MARKS.

Answer all questions in this section.

Marks for each question are indicated in the brackets.

21. The figure below shows a cylindrical plastic milk tank.



- (a) How many litres of milk can the tank hold when full? (2 marks)

- (b) If the tank is cut to form a rectangular plastic sheet, find the length of the sheet. (2 marks)

- (c) Work out the area of the plastic sheet formed. (2 marks)

22. The table below shows the exchange rates at the forex bureau.

S/No	CURRENCY	BUYING
(i)	1 US Dollar (\$)	Ug Shs. 3660
(ii)	1 Kenya Shilling (K Sh.)	Ug Shs. 35

- (a) Convert 300 US Dollars to Uganda Shillings. (2 marks)

- (b) If a trader had various amount of money in currencies as;

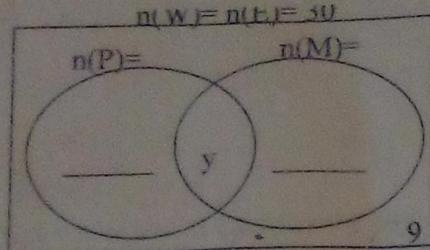
(i) 100 Kenya Shillings (K. Shs.)

(ii) 50 US Dollars (\$)

(iii) A note of twenty thousand Uganda Shillings.

Calculate the amount of money he had in Uganda Shillings. (4 marks)

23. In a class of 30 candidates, all candidates drink water (W), 11 eat posho (P), 20 eat matooke (M) and y candidates take all the three while 9 candidates drink water only. (a) Represent the above information on the Venn diagram below. (2 marks)



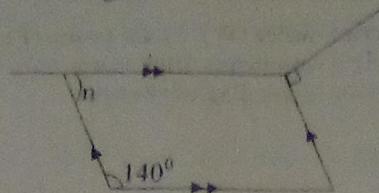
- (b) Find the value of y . (2 marks) (c) Work out the probability of picking a candidate who doesn't eat posho. (1 mark)
24. (a) Convert 9_{ten} to binary base. (b) Solve for a : $2^{2a} \times 2^3 = 32$. (2 marks) (2 marks)
- (c) Express 4030 in standard form. (2 marks)

25. On John's farm, the fraction of goats is $\frac{1}{3}$ more than that of sheep. The farm has 300 sheep.
- (a) Find the fraction of the sheep on the farm. (2 marks)

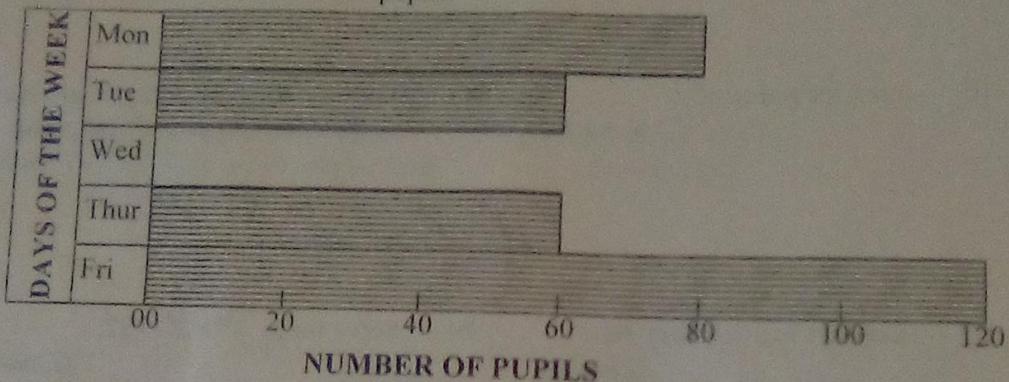
- (b) Work out the total number of animals on the farm. (2 marks)

26. (a) The interior angle of a regular polygon is three times its exterior angle. Calculate the size of its exterior angle. (2 marks)

- (b) In the figure below, solve for the size of angle n in degrees. (2 marks)



27. The bar-graph below shows number of pupils who did not attend sports last week at Junior school in a class of 120 pupils.



- (a) Which day was most likely to be a public holiday? (1 mark)
- (b) Work out the median of pupils who did not attend sports that week. (2 marks)
- (c) Calculate the total number of pupils who did not attend sports that week. (2 marks)

28. A herdsman constructed a circular kraal of diameter 14m.

- (a) Find the area of the kraal? (2 marks)

- (b) If a kraal was fenced with poles planted 2 metres apart at a cost of Shs. 3000 per pole, how much did he spend? (4 marks)

29. (a) Work out:
$$\frac{2.2 + 1.04}{1.8}$$
 (2 marks)

- (b) A teacher deposited Shs. 40,000 on her savings bank account for $\frac{1}{2}$ a year at a simple interest rate of 11% per annum. Calculate the amount of money she had on her account after the period altogether? (3 marks)

30. A tourist left home and travelled 60km Westwards to a National Park. She then turned on a bearing of 225^0 and travelled to the nearest town a distance of 50km.
(a) Using a scale of 1cm to represent 10km, construct an accurate diagram to show the tourist's journey. (4 marks)

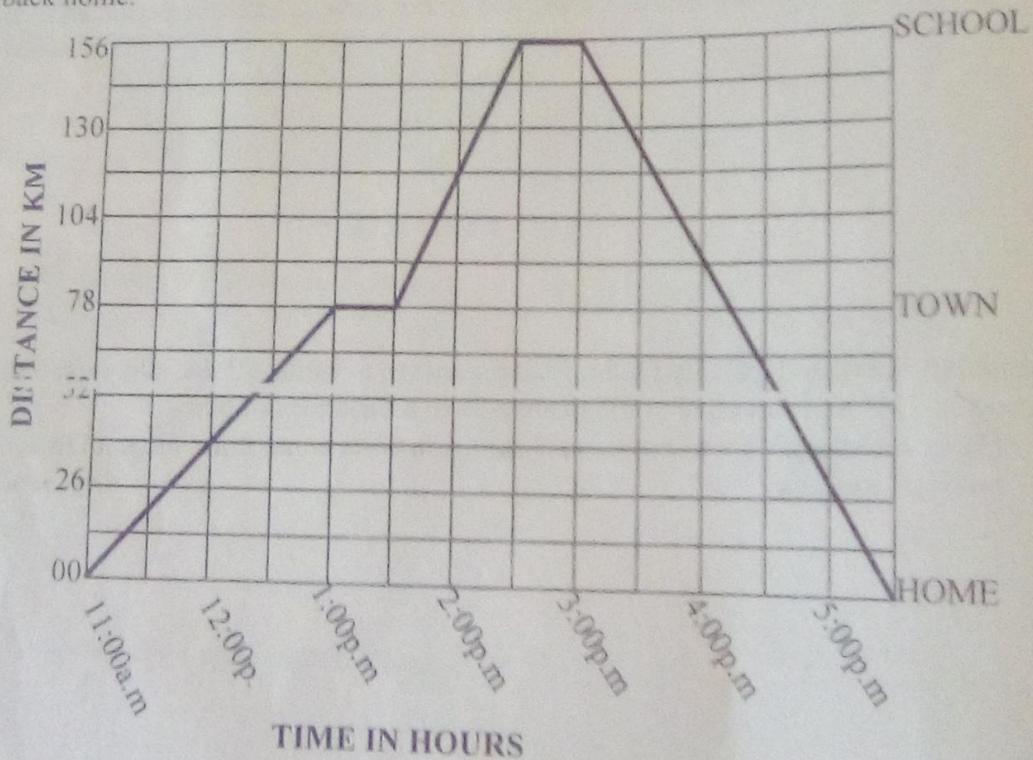
- (b) Find the shortest distance from town to his home in Km. (1 mark)

(2 marks)

31. (a) Solve the inequality: $3t + 3 \leq 18$

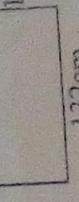
- (b) Abdul is 8 years older than his wife. If their total age is 88 years, how old is the wife? (2 marks)

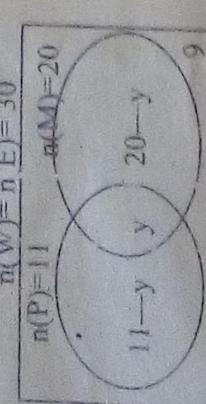
32. The travel graph below shows a parent's journey from home via town to school and then back home.

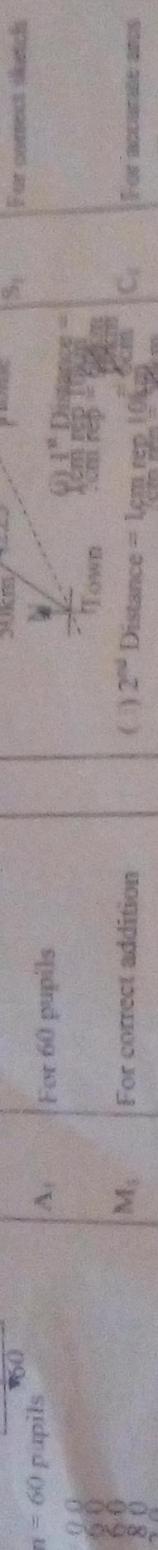


- (a) At what time did a parent arrive back home? (1 mark)
- (b) For how long did he rest in the whole journey? (1 mark)
- (c) Calculate his average speed for the whole journey. (2 marks)

KISORO DISTRICT MOCK MATHS MARKING GUIDE, 2023

S/N	SOLUTION	MKS	COMMENTS	S/N	SOLUTION	MKS	COMMENTS
13.	$\text{Time} = 3:35 \text{ p.m}$ $\text{Time} = 3:35 \text{ p.m}$ $+ 12:00 \text{ Hrs}$ $\underline{15:35 \text{ Hrs}}$	B ₁	For 3:35 p.m	19.	$V_{\text{ed}} + 40 \text{ days} = \dots \text{ (finite 7)}$ $V_{\text{ed}} = 3$ $+ 40 = \dots \text{ (finite 7)}$ $3 = \dots \text{ (finite 7)}$ $3 + 7 = \dots \text{ (finite 7)}$ $\text{remainder } 1$ $\circ 1 \text{ (finite 7)}$ $\therefore \text{Monday}$	B ₁	For correct method
14.	$\frac{100 - 10}{100} \times p = 360 \text{ litres}$ $100 \times \frac{90}{100} \times p = 360 \text{ litres} \times 100$ $\frac{90p}{100} = \frac{360}{100} \times 100 \text{ litres}$ $90p = 360 \times 100$ $p = 400 \text{ litres}$	M ₁	For correct method	20.	$\frac{1}{1} = \frac{1}{4}$ $\frac{1}{1} = \frac{3}{8}$ $= \frac{1}{4} + \frac{3}{8}$ $= \frac{1}{4} \times \frac{8}{3}$ $= \frac{1}{3}$ $= \frac{2}{3}$	M ₁	For correct substitution
15.	$\text{Total weight of 3 pupils} = 3 \times 16 \text{ kg}$ $= 48 \text{ kg}$ $\text{Total weight of other 2 pupils}$ $= 48 \text{ kg} - 18 \text{ kg}$ $= 30 \text{ kg}$	B ₁	For 48kg	B ₁	For 30kg	A ₁	For $\frac{2}{3}$
16.	$T \text{ surface area} =$ $2(L \times L) + (L \times 1) + (L \times L)$ $2(9 \text{ dm} \times 9 \text{ dm}) + (9 \text{ dm} \times 9 \text{ dm}) +$ $(9 \times 9 \text{ dm})$ $2 \times (81 \text{ dm} + 81 \text{ dm} + 81 \text{ dm})$ $2 \times 243 \text{ dm}^2$ $= 486 \text{ dm}^2$	M ₁	For correct multiplying	21.	$\text{Capacity} = \pi r^2 h$ $= \frac{22}{7} \times \frac{100}{2} \text{ cm} \times 21 \text{ cm} \times 100 \text{ cm}$ $= 66 \times 21 \text{ litres}$ $= \frac{10}{10} \text{ litres}$ $= 1386 \text{ litres}$ $= \frac{10}{10} \text{ litres}$ $= 138.6 \text{ litres}$	M ₁	For correct method
17.	$\text{Sum} = p + p + 2 + p + 4 = 36$ $p + p + p + 2 + 4 = 36$ $3p + 6 = 36$ $3p = 36 - 6$ $3p = 30$ $p = \frac{30}{3}$ $p = 10$	M ₁	For forming equation	22.	$\text{Length} = \pi D$ $= \frac{22}{7} \times 642 \text{ cm}$ $= 22 \times 6 \text{ cm}$ $= 132 \text{ cm}$	M ₁	For 132cm
18.	$\text{Alternate angle + supplementary}$ $\text{angle } k = 80^\circ + 180^\circ$ $k = 260^\circ$	M ₁	For correct method	(c)	$\text{Area} = L \times W$  132 cm 100 cm	A ₁	For $\frac{260}{106}$

S/N	SOLUTION	MURKS	COMMENTS	S/N	SOLUTION	MURKS	COMMENTS	
22.	<p>(a) 1 US Dollar costs Ug Shs. 3660 $\frac{300}{300}$ US Dollars cost Ug Shs. 3660 x M₁ $= \text{Ug Shs. } 1,098,000$</p> <p>(b) (i) 1 Kenya Shilling = Ug Shs. 35 100 Kenya Shilling = Ug Shs. 35×100 $= \text{Ug Shs. } 3,500$</p> <p>(ii) 1 US dollar costs Ug Shs. 3,660 50 US Dollars cost Ug Shs. $3,660 \times 50$ $= \text{Ug Shs. } 183,000$</p> <p>(iii) Ug Shs. 20,000 Amount = Ug Shs. 20,000 $+ \frac{\text{Ug Shs. } 183,000}{\text{Ug Shs. } 206,500}$</p>	A ₁ M ₁ A ₁ 06	For correct multiplying For Ug Shs. 1,098,000 For Ug Shs. 3,500 For Ug Shs. 183,000 For correct addition For Ug shs. 206,500	(i) $2^{2a} \times 2^3 = 32$ $2^{2a} \times 2^3 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$ $2^{2a} \times 2^3 = 2^5$ $2a + 3 = 5$ $2a = 5 - 3$ $\underline{2a} = 2$ $2 = 2$ $a = 1$	M ₁ For using laws of indices	M ₁		
				(ii) $4030 = 4030 \div 10$ $= 403 \div 10$ $= 40.3 \div 10$ $= 4.03 \times 10^{-3}$	M ₁ For correct method	A ₁ For 4.03×10^{-3}	A ₁ 06	
23.	<p>$n(W) = n(E) = 30$</p> <p>$n(P) = 11$</p>  <p>$n(A) = 20$</p> <p>(b) $11 - y + 20 - y + 9 = 30$ $11 + 20 + 9 - y = 30$ $40 - y = 30$ $40 - 30 = y$ $10 = y$ $y = 10$</p> <p>(c) Probability = $\frac{1:OC}{:OC}$ Probability = $\frac{20 - y + 9}{30}$ $= \frac{20 - 10 + 9}{30}$ $= \frac{19}{30}$</p>	B ₁ B ₁ B ₁	For 11 — y For 20 — y For forming equation For $y = 10$	<p>a) $1 - \frac{1}{3} = \frac{2}{3}$ $\frac{3}{3} - \frac{1}{3} = \frac{2}{3}$ $\frac{3}{3} - \frac{1}{3} \times \frac{1}{2}$ $\frac{2}{3} \times \frac{1}{2}$ $= \frac{1}{3}$</p> <p>b) Animals = $\frac{y}{3}$ $\frac{1}{3}$ of $y \leq 300$ animals $3 \times \frac{1}{3} \times y = 300 \times 3$ $y = 900$ animals</p> <p>(a) Sketch $\frac{3y}{3y - y}$</p>	M ₁ M ₁ A ₁ A ₁	For correct method For 900 animals For forming equation For exterior angle 45°	M ₁ M ₁ A ₁ A ₁	A ₁ 04
				(b) $\frac{3y + y}{4y} = \frac{180^\circ}{4y}$ $\frac{4y}{4y} = \frac{180^\circ}{4y}$ $1 = \frac{180^\circ}{4y}$ $y = 45^\circ$	M ₁			
24.	<p>(a) $\begin{array}{ c c c }\hline & 2 & 9 \\ \hline & 2 & 4 \\ \hline & 2 & 2 \\ \hline & 1 & 1 \\ \hline \end{array}$</p> $= 1601_{\text{base}}$	B ₁ 05	For correct division For 1001 _{base}	<p>(b) Co-interior angles $n + 140^\circ = 180^\circ$ $n + 140^\circ - 140^\circ = 180^\circ - 140^\circ$ $n = 40^\circ$</p>	M ₁	For correct method For exterior angle 45°	A ₁ A ₁	

S/N	SOLUTION	Marks	Comments	SIN	SOLN.	Marks	Comments
27	(a) Friday (b) Median = 90, 90, 60, 80, 120  Median = 60 pupils (c) Total = 90 60 60 80 120 $\frac{1}{2} \times 20$ pupils	B ₁ M ₁	For Friday For correct method For 60 pupils	30.	(a) SKETCH Park 50km N Town 60km N Home 10km N For correct sketch	M ₁	
		M ₁	For correct addition		(b) 2 nd Distance = 1cm rep. 10 ⁵ cm 1cm rep. = 2cm For accurate ans	M ₁	
		A ₁ B ₁	For 320 pupils		(c) 2 nd Distance = 1cm rep. 10 ⁵ cm 1cm rep. = 2cm For accurate ans For 100cm	M ₁	
28.	(a) Area = πr^2 Radius = $\frac{14}{2}$ m = $\frac{22}{7} \times 7m \times 7m$ = $\frac{22}{7} \times 49m^2$ = 154m ² (b) (i) Distance round a kraal = $\frac{\pi D}{2}$ = $\frac{22}{7} \times 14m$ = 44m (ii) Number of poles = $\frac{\text{Distance}}{\text{Distance apart}}$ = $\frac{44m}{2m}$ = 22 poles	M ₁ A ₁ B ₁	For correct multiplying For 154m ² For 44m		(a) $\frac{31}{3} + \frac{18}{3} \leq 18 - 3$ $\frac{49}{3} \leq 15$ For t ≤ 5	M ₁	For collection of like terms
		B ₁	For 22 poles		(b) Abdul wife Sum: $m + 8 + m + 8 + 8 = 33$ years $2m + 24 = 33$ $2m = 9$ $m = 4.5$ Wife = 40 years	A ₁ M ₁	For summing equation
		M ₁	For correct method		Wife = 40 years For 40 years	A ₁	
29.	(a) $\frac{2.2 + 1.04}{100}$ $= \frac{2.2}{100} + \frac{1.04}{100}$ $= 0.022 + 0.0104$ $= 0.0324$	M ₁	For correct method		(a) At 5.30pm (b) 30 minutes + 30 minutes = 60 minutes or 1 hour	B ₁ B ₁	For CAO
		A ₁	For 1.8		(c) Average speed = $\frac{\text{Total distance}}{\text{Time taken}}$ = $\frac{156\text{km}}{1\text{hr}}$ $\frac{156\text{km}}{1\text{hr}} \times \frac{1\text{hr}}{12\text{min}}$ $= 48\text{km/hr}$	M ₁	For correct method
		M ₁	For correct method			A ₁ B ₁	For 42.200
30.	(a) $\frac{200 \times 11}{40000} \times 100 = \frac{18}{100} = 1.8$ (b) Amount = Principle + Interest Interest = $\frac{P \times R \times T}{100} \times \frac{1}{12}$ Shs. $\frac{40000}{100} \times \frac{1}{12} \times \frac{1}{12}$ Shs. 200×11 Shs. $\frac{2200}{40000} \times 100 = 5.5$ Amount = Shs. 4,000 + Shs. 5.5 Shs. 4,055	A ₁	For Shs. 2,200 For Shs. 42,200		(a) At 5.30pm (b) 30 minutes + 30 minutes = 60 minutes or 1 hour	B ₁ B ₁	For 42.200