SUCCESS ACADEMIC FOUNDATION OF UGANDA (SAFU)

PRE - PRIMARY LEAVING EXAMINATION SET I, 2022

MATHEMATICS

Time Allowed: 2 Hours 30 Minutes

EMIS NO	PERSONAL NO

Candidate's Name: _____

Candidate's Signature: _____

School Name: _____

District Name: _____

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Read the instructions carefully:

1. This paper is made up of Sections A and B.
2. Section A has 20 short-answer questions, (40 marks)
3. Section B has 12 questions (60 marks)
4. Answer All questions. All answers to both Sections A and B must be written in the spaces provided.
5. All answers must be written using blue or black ball point pen or ink. Diagrams should be drawn in pencil
6. Unnecessary alteration of work may lead to loss of marks.
7. Any handwriting that cannot be read may lead to loss of marks.
8. Do not fill anything in the box indicated For Examiners' Use Only.

FOR EXAMINERS' USE ONLY

Qn. No.	MARKS	Final Mark
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

Turn Over

Offices on Gadafi Rd, Plot 201 Opposite Gateway Bus Garage, Tel:0774-488552 / 0705-004736, Mityana Taxi park on Kamusese building Rm1Near Kampala Stage Tel:0753396322, Tororo Market street Opposite UMEME Office Tel 0782520834 / 0705508135

SECTION A: (40 MARKS)

Questions 1 to 20 carry two marks each.

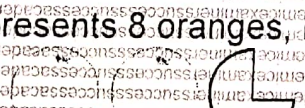
1. Work out:
$$\begin{array}{r} 3\ 2 \\ -\ 1\ 0 \\ \hline \end{array}$$

2. Write XCIX in words.

3. Simplify: $4-2(p+1)$

4. Given that $A=\{2,4,6,8\}$ and $B-A=\{3,5,7,9\}$ Find $n(A\cap B)$

5. Find the sum of the 4th and 6th prime number.

6. Given that  represents 8 oranges, How many oranges are represented by the following pictures

7. A quarter a dozen of sweets costs sh. 1800. What is the cost of 8 sweets?

8. Given the packet "A" and the container (B), below

A

B

How many packets of milk can be obtained from container B?

9. Express: 4.32×10^{-2} as an ordinary number.

10. A birthday party ended at 11:15p.m. If the party lasted 1½ hours, At what time did the part start?

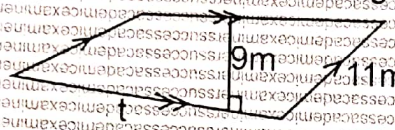
11. In a class, the ratio of boys to girls is 3:5 respectively. If there are 12 more girls than boys, how many pupils are in the class?

12. The length of a room is 12m. On the map it represents 3cm. Find the scale of the map.

13. Find the Highest Common Factor (H.C.F) of 24 and 18

14. Increase 1200kg by 20%

15. The area of the parallelogram below is 108m2. Calculate the length t in metres.

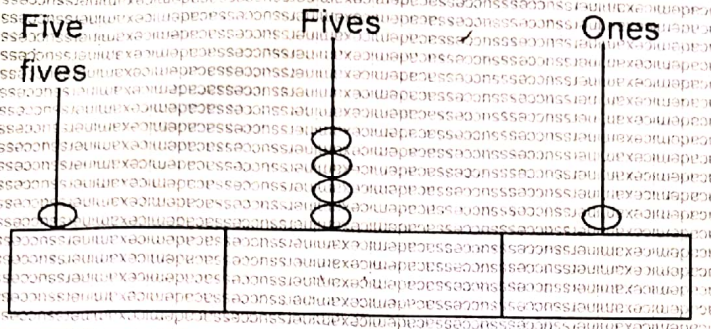


16. During a Mathematics quiz, Obok got 85, Opio got 79 and Anna got 80. Find the range of those marks

17. Solve $3^n \div 3^3 = 1$

18. Construct an angle of 140° using a protractor

19. Change the number on the abacus below to base ten



20. A farmer deposited sh. 72000 in a village SACCO. After one year, the farmer earned a simple Interest of sh. 3600. Find the simple interest rate per year.

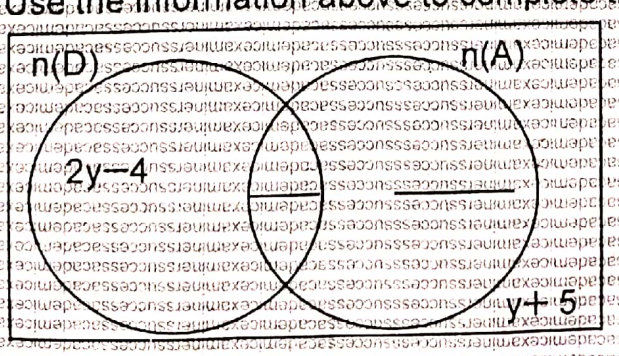
SECTION B (60 MARKS)

21. a) Change $\frac{4}{11}$ as a recurring decimal (2 marks)

b) Work out $\frac{3.9 + 3.6}{0.06 \times 0.5}$ (3 marks)

22. In a class of sixty nine pupils, all of them like Music $(2y - 4)$ like Debating (D) and Music only, $(y + 6)$ like music and Art only, $(y + 2)$ like all the three while $y + 5$ like only music

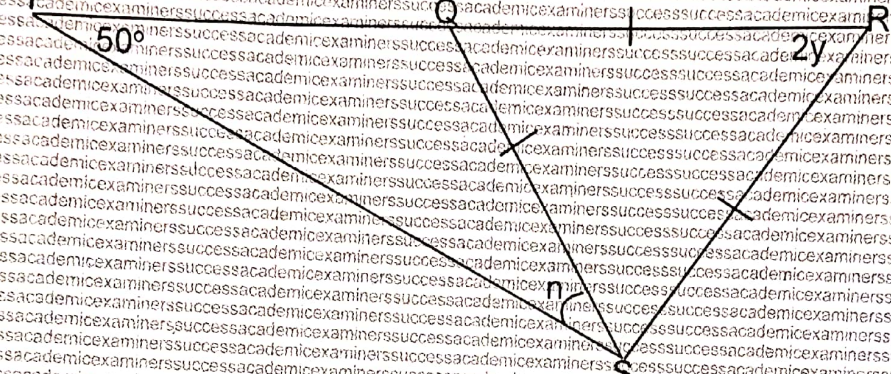
a) Use the information above to complete the Venn diagram below. (2 marks)



b) How many pupils like all the three subject? (3 marks)

23. Study the figure below and answer the questions that follow.

Given that angle QPS = 50°



a) Find the value of y. (2 marks)

b) Work out angle n (3 marks)

24. Given the numeral 346.85

a) Expand the above numeral using exponents. (2 marks)

b) Find the quotient of the value of 4 and the place value of 5 in the above numeral (3 marks)

25. A blouse costs ⅓ the cost of a skirt while a dress costs ½ the cost of the blouse. If their total cost is sh. 72000. What is the cost of each item. (5 marks)

26 Kibuuka went shopping and bought the following items

6 tomatoes at sh. 2000

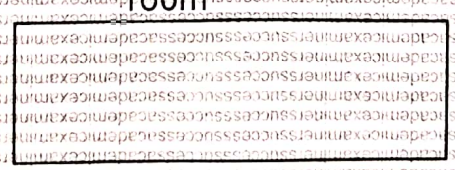
1 ½ litre of cooking oil at sh. 5000 per half litre

20 oranges at sh 1000 for every 4 oranges

2 litres of milk at sh. 1800 per litre

If Kibuuka was given change of sh. 3500 how much money did he have at the beginning? (6 marks)

27. Mr. Opolot fenced his land using the measurements as shown below.



a) If he fenced with poles at intervals of 4 metres apart from each corner, how many poles did he use? (3 marks)

b) If each pole is worth sh. 3,500, how much money did he spend altogether? (2 marks)

28. The table below shows the journey made by a bus from Busia to Jinja. Use it to answer the questions that follow.

Towns	Distance	Departure Time	Arrival Time
Busia	0	10:00hrs	
Bugiri	80km	11:20hr	13:00hrs
Iganga	120km	13:30	14:45hrs
Jinja	180km		16:30hrs

a) How long does the bus stay at Iganga? (1 mark)

b) Find the distance between Bugiri and Jinja. (1 mark)

c) Express the arrival time at Bugiri in the 12 hour clock system (1 mark)

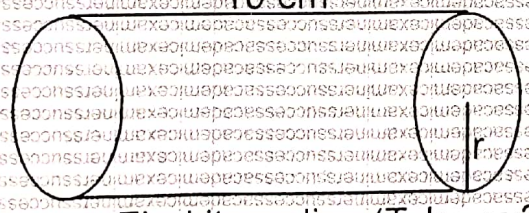
d) Calculate the average speed of the bus for the whole journey. (2 marks)

9. The average weight of 9 pupils is 45kg. Four pupils whose average weight is 50kg are asked to leave the group. Find the average weight of the remaining pupils. (4 marks)

30 a) Using a ruler a pencil and a pair of compasses only, construct a rhombus WXYZ, such that diagonal WY = 6cm and XZ = 8cm (4 marks)

b) Measure diagonal QS (1 mark)

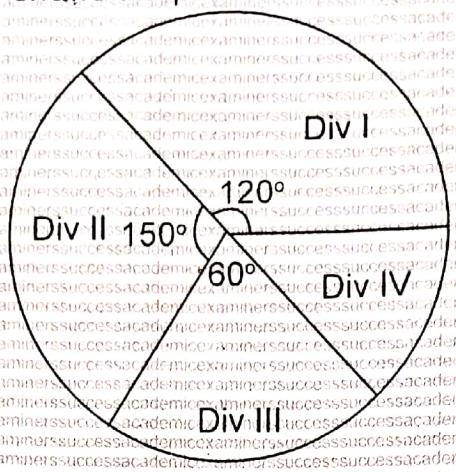
31. A cylindrical tank has a volume of 616cm³.



a) Find its radius (Take $\pi = \frac{22}{7}$) (3 marks)

b) Calculate the area of the curved surface (2 marks)

32. The pie - chart below shows the performance of a class in a Mock examination.



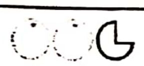
a) If 20 pupils passed in division IV, how many pupils were in the class? (3 marks)

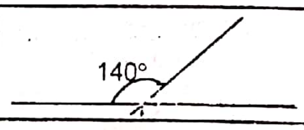
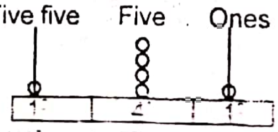
b) How many more pupils passed in division II than division III? (2 marks)

SUCCESS ACADEMIC FOUNDATION OF UGANDA (SAFU)

PRIMARY LEAVING EXAMINATION SET I 2022

MATHEMATICS MARKING GUIDE

No	SOLUTION	MARK	COMMENT
1.	$\begin{array}{r} 3\ 2 \\ -1\ 0 \\ \hline 2\ 2 \end{array}$	B_2	Award On Sight
2.	XCIX = XC IX 90 9 = 99 Ninety nine	B_1 B_1	- for 99 - for writing in words
3.	$4 - 2(p+1)$ $4 - 2\times p - 2\times 1$ $4 - 2p - 2$ $4 - 2 - 2p$ $2 - 2p$	M_1 B_1	- for removing brackets - for 2–2p
4.	$A \cap B = \{\ \}$ or $\varnothing$ $n(A \cap B) = 0$	B_1 B_1	- follow through
5.	Prime numbers 2, 3, 5, 7[4th], 11, 13[6th], 17 Sum = 7 + 13 = 20	B_1 B_1	-for listing -for 20
6.	 $\frac{3}{4_1} \times 8^2 = 6$ 8 + 8 + 6 = 22 oranges	B_1 B_1	- follow through - for correct working
7.	$\frac{1}{4}$ of 12 = $\frac{1}{4_1} \times 12^3$ = 3 sweets 3 sweets = sh. 1800 1 sweet = sh. $\frac{1800^{600}}{3_1}$ 8 sweets = sh. 600 × 8 = sh. 4800	M_1 A_1	- follow through correct working
8.	Number of packets $20 \div \frac{1}{4} = \frac{20}{1} \times \frac{4}{1}$ $= \frac{80}{1}$ = 80 packets	M_1 A_1	- for division - for 80 packets
9.	4.32×10^{-2} $\frac{432}{100} \times \frac{1}{10^2} = \frac{432}{100} \times \frac{1}{100}$ $= \frac{432}{1000}$ = 0.0432	M_1 A_1	follow through correct working
10	S.T = E.T – T.T S.W = ¹⁰11:15⁶⁰P.M 75 –1: 30 30 9: 45P.M 45	M_1 B_1	- for working - for 9:45P.m reject 9:45a m
11	Total ratio = 3 + 5 = 8 Difference = 5 – 3 = 2 Let the total number of pupils be K		

No	SOLUTION	MARK	COMMENT
	$\frac{2}{8}$ of K = 12 $\frac{2}{8} \times K = 12$ $8 \times \frac{2}{8}K = 12 \times 8$ $\frac{2}{2}K = \frac{12^6 \times 8}{2}$ K = 48		
12.	12 is represented by 3cm but 1m = 100cm 12m = (12 ×100)cm = 1200cm 1cm = $\frac{1200^{400}}{3_1}$ 1cm represents 400cm The scale used is 1:400	B_1 B1	for 1200cm - for 1:40 reject 1cm: 400cm
13.	$\begin{array}{c\|c\|c} 2 & 24 & 18 \\ 3 & 12 & 9 \\ & 4 & 3 \end{array}$ HCF = 2 × 3 = 6	M_1 A_1	- follow through other methods
14.	Increase: $\frac{20}{100} \times 1200$kg (2 × 20)kg 240kg New weight: 1200kg + 240kg = 1440kg	M_1 B_1	follow through other workings
15.	Area = b × h 180m² = t × 9m 180m² = 9t $\frac{^{12}180m^2}{9m} = \frac{9tm}{9m}$ 12m² = t	M_1 A_1	-for working correct working - for 12m²
16.	Range = H – L = 85 – 79 = 6 marks	M_1 A_1	- for working - for 6 marks
17.	$3^n \div 3^3 = 1$ $3^n \div 3^3 = 3^0$ n – 3 = 0 n – 3 + 3 = 0 + 3 n = 3	M_1 A_1	-for correct working - for 3
18.		B_2	-for accuracy
19.	 $141_{five} = (1 \times 5^2) + (4 \times 5^1) + (1 \times 5^0)$ = 25 + 20 + 1 = 46	M	- for expanding

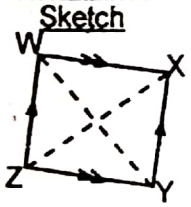
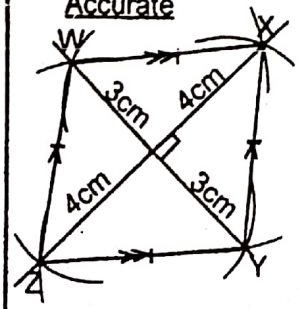
No	SOLUTION	MARK	COMMENT
20	$I = P \times R \times T$		
	sh.3600 = sh.720R		
	$\frac{sh.3600}{sh.720} = \frac{sh.720R}{sh.720}$		
	5% = R		
	∴ 5% = Rate	A_1	-for 5%
21 a)	$\frac{4}{11} = 11\overline{)40}\ 0.3636\ldots$	B_1	- for dividing
	−33, 70, −66, 40, −33, 70, −33		
	$\frac{4}{11} = 0.3636\ldots$	A_1	for 0.3636.....
b)	$\frac{3.9+3.6}{0.06\times0.5}$ S.W 3.9 + 3.6 = 7.5		
	$\frac{7.5}{0.06\times0.5} = 75 \div \left(\frac{6}{100}\times\frac{5}{10}\right)$	M_1	- for changing to fraction
	$= {}^{5}\cancel{75}^{15} \times \frac{\cancel{100}^{50}}{\cancel{10}_{1}\ \cancel{6}_{2}} \times \frac{10^{1}}{5_{1}}$	B_1	- for multiplying and cancelling
	$= \frac{5\times50\times1}{1\times1\times1}$		
	$= \frac{250}{1}$		
	= 250	A_1	- for 250
22. a)	n(ε) = 69		
	n(D) n(A) 2y−4 y+2 y+6 y+5	B_1	-for y+2 proper entery
		B_1	-for y+6
b)	2y − 4+y+2+y+6+y+5=69	M_1	-for formation of the equation
	2y+y+y+2+6+5−4 =69		
	5y +13−4 = 69		
	5y+9 = 69		
	5y+9 − 9 = 69− 9		
	5y = 60		
	$\frac{5y}{5} = \frac{\cancel{60}^{12}}{\cancel{5}}$		
	y = 12	B_1	- for 12
	All the three = y + 2		
	= 12 + 2		
	= 14pupils	B_1	- for 14 pupils
23. a)	QRS is an equilateral triangle interior angles are equal		
	2y + 2y+2y = 180°	M_1	-for equation formed
	6y = 180°		
	$\frac{6y}{6} = \frac{\cancel{180}^{30}}{\cancel{6}}$		
	y = 30°	A_1	- for 30°.
b)	∠PQS = 180° − 2y		
	= 180° − (2 × 30)°		
	= 180° − 60°		
	= 120°	B	-for 120°
	60 + 120 = 180	B	-for equation formed
	120 + 180		
	180 − 120 = 60 − 120		

No	SOLUTION	MARK	COMMENT
	10^{3} 10^{2} 10^{1} 10^{0} 10^{-1} 10^{-2}		
	$(3\times10^{2})+(4\times10^{1})+(6+10^{0})+(8\times10^{-1})+(5\times10^{-2})$	B_2	-for correct expanding
b)	3 4 6. 85 Hundredths $\frac{1}{100}$	B_1	- for 40
	4 × Tens	B_1	$\frac{1}{100}$
	4 × 10		
	40		
	Quotient = $40 \div \frac{1}{100}$		
	$= 40 \times \frac{100}{1}$		
	= 4000	A_1	- for 4000
25.	Let the cost of a skirt be X		

Skirt	blouse	dress	total
x	$\frac{1}{3}x$	$\frac{1}{2}$ of $\frac{1}{3}x$	sh72000

$\frac{1}{2}\times\frac{1}{3}\times\frac{1}{6}x$ = sh. 72000		follow through correct working
$\frac{x}{1}+\frac{x}{3}+\frac{x}{6}$ = sh. 72000		
LCM is 6	M_1	
${}^{6x}\frac{x}{1}+{}^{x62}\frac{x}{3_1}+\frac{x^{61}}{6_1}$ = sh 72000× 6		
6x + 2x + x = sh. 432000	M_1	
9x = sh.432000		
$\frac{9x}{9} = \frac{\cancel{432000}^{48,000}}{9}$		
Skirt = sh.48,000	B_1	
Blouse = $\frac{1}{3}\times$ sh.$\cancel{48,000}^{16000}$		
= sh. 16,000	B_1	
Dress = $\frac{1}{2}\times\frac{1}{3}=\frac{1}{6}$		
$= \frac{1}{6_1}\times$ sh. $\cancel{48000}^{8000}$		
= sh. 8,000		

26	Tomatoes	Cooking oil	
	sh. 2000	½ litre = sh.5000	
		1 litre = sh 10000	B_1 - for sh. 15,000
		1½ litre=sh.15,000	B_1 for sh.5,000
	Oranges	Milk	
	$\frac{20^{5}}{4_1}\times$ sh.1000	1800 × 2	
	sh 5000	sh. 3600	B_1 - for sh.3,600
	Total amount in Ugsh		
	sh 15 000		
	= 5 000		
	sh 3,600		M - for working
	= 2,000		
	sh 25 600		= sh. 25 600

No	SOLUTION	MARK	COMMENT
	Amount at the beginning sh. 29,100	B	for sh 29 100
27.	a) P = 2(L + W) = 2(160m + 40m) = 2(200m) = 2 × 200m = 400m Number of poles = $\frac{400m}{4m}$ = 100poles	M_1 B_1 A_1	-for working -for 400m - for 100 poles
	b) 1 pole costs sh. 3500 100 poles cost sh. 3500 ×100 = sh.350,000	M_1 A_1	for working for sh.350,000
28.	a) 14 45hrs −13 30hrs 1 15 It took 1hr 15minutes	B_1	- follow through
	b) 180km − 80km 100km	B_1	for 100km
	c) 13:00hr + 12:00hr 6:00p.m	B_1	for 6:00p.m
	d) Time taken = 16:30hr −10:00 6:30 = 6½hrs Average speed = $\frac{\text{Distance}}{\text{Time taken}}$ = 180km ÷ 6½hr = 180km ÷ $\frac{13}{2}$ = 180km $\frac{2}{13}$ = $\frac{360}{13}$ km/hr = $27\frac{9}{13}$ km/hr	M_1 A_1	- for working - for $27\frac{9}{13}$
29.	Sketch  Accurate  	S_1 L_1 L_1 L_1	- for sketch -for WY = 6cm - for XZ = 8cm - for joining
	b) WX = 5cm	L_1	- for 5cm
30.	a) Total weight of 9 45kg × 9 405kg	B	- for 405kg
	Remaining = 9 - 4 = 5 Total average weight = 405kg − 200km 205kg Average of 5 = $\frac{205kg}{5}$ = 41kg	B_1 A_1	- for 205kg - for 41kg
31	a) $V = \pi r^2 h$ $7 \times 6160cm^3 = \frac{22}{7}r^2 \times 10cm \times 7$ $7 \times 6160cm^3 = 22r^2 \times 10cm$ $7 \times {}^{28}6160^{560}cm^3 = {}^{1}\cancel{22}r^2 \times {}^{1}10cm$ $\frac{22}{2} \times 10cm \quad 22 \times 10cm$ $7 \times 28cm^2 = r^2$ $196cm^2 = r^2$ $\sqrt{196cm^2} = \sqrt{r^2}$ 14cm = r	M_1 M_1 A_1	- for working - for working -for 14cm
	b) $A = 2\pi rh$ $A = 2 \times \frac{22}{7} \times 14cm \times 10cm$ $A = 44 \times 2cm \times 10cm$ $A = 88cm \times 10cm$ $A = 880cm^2$	M_1 A_1	-for working - for $880cm^2$
32.	a) 360° − (150° + 60° + 120°) 360° − 330° 30°	B_1	- for 30°
	Let the number of pupils be K $\frac{30°}{360°} \times K = 20$ $12 \times K = 20 \times 12$ K = 240pupils	M_1 A_1	- for working - for 240pupils
	b) DIV II = 150° DIV III = − 60 90° more $\frac{90}{360} \times 240$ pupils = 60 more	M_1 A_1	- for working - for 60 more