



THE REPUBLIC OF UGANDA

# STAR LIGHT EXAMINATION CONSULTANCY KAMPALA

PRIMARY SEVEN PRE-PLE SET I EXAMINATION 2023

## MATHEMATICS

Time allowed: 2 hours 30 minutes

Index No.

Random No.						Personal No.		

Candidate's Name: TR. WALTER

Candidate's Signature: AMU

School Random Number: 077523297810752627380

District ID: CALL OR INBOX FOR BUSINESS

Read the following instructions carefully;

1. This paper has two sections A and B
2. Section A has 20 short questions. (40marks)
3. Section B has 12 questions. (60marks)
4. All answers to questions in section A and B must be written in the space provided below.
5. Any hand writing that cannot easily be read may lead to loss of marks.
6. Do not fill things in the boxes shown: "for examiners' Use only".

### FOR EXAMINERS' USE ONLY

Qn. No.	Marks	Initials
1 - 5		
06-10		
11-15		
16-20		
21 - 22		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

### SECTION A (40 Marks)

1. Fill in the missing numbers:-

$$5 + 5 = \underline{2} \times \underline{5}$$

2. Write the value of two fifth of one million in words.

$$\frac{2}{5} \times \frac{200,000}{1,000,000} = \underline{\underline{400,000}}$$

3. A packet of coffee has a mass of  $\frac{1}{8}$  kg. Find the total mass of 3 similar packets in grams.

Weight (Mass) of 1 packet

$$1 \text{ kg} = 1000 \text{ g}$$

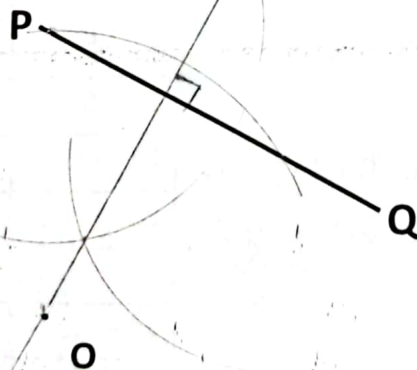
$$\frac{1}{8} \text{ kg} = \left( \frac{1}{8} \times 1000 \right) \text{ g} = 125 \text{ g}$$

Mass of 3 packets

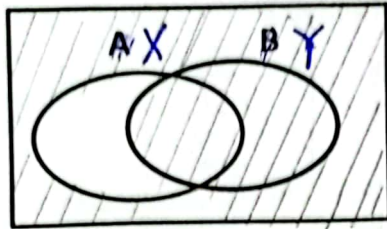
$$\begin{array}{r} 125 \text{ g} \\ \times 3 \\ \hline \end{array}$$

$$\underline{\underline{375 \text{ g}}}$$

4. With the help of a ruler and a pair of compasses, draw a perpendicular line to line PQ through point O.



5. Shade  $(X - Y)^1$



6. Find the unknown P.

$$32p = 101_{\text{four}}$$

$$\begin{array}{r} p' | p^0 \\ 3 | 2 \\ \hline 4^2 | 4^1 | 4^0 \\ 11 | 0 | 1 \end{array}$$

$$(3 \times p') + (2 \times p^0) = 4(1 \times 4^2) + (0 \times 4^1) + (1 \times 4^0)$$

7. Find the range of 0.5, 2, 1 and 2.

$$\text{Range} = H - L$$

$$\text{Range} = 2 - (2)$$

$$\text{Range} = 2 + 2$$

$$\text{Range} = 4$$

$$(3 \times p') + 2 \times 1 = (1 \times 4^2) + (0 \times 4^1) + (1 \times 4^0)$$

$$3p' + 2 = (4 \times 4) + 0 + (1 \times 1)$$

$$3p' + 2 = 16 + 0 + 1$$

$$3p' + 2 = 17$$

$$3p' + 2 - 2 = 17 - 2$$

$$\begin{array}{r} 5 \\ 3p' = 15 \\ \hline 3 \quad 3 \quad 1 \\ \hline p = 5 \end{array}$$

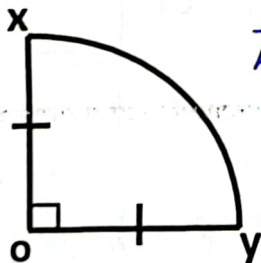
8. Prime factorize 72 and state your answer in power form.

$$\begin{array}{r} 2 | 72 \\ 2 | 36 \\ 2 | 18 \\ 3 | 9 \\ 3 | 3 \\ \hline 1 \end{array}$$

$$2 \times 2 \times 2 \times 3 \times 3$$

$$2^3 \times 3^2$$

9. If the length of arc xy is 44dm. Find the length of xo.



$$\frac{1}{4} 2\pi r = C$$

$$\frac{1}{4} \times 2 \times \frac{11}{7} r = 44 \text{ dm}$$

$$\frac{1}{2} \times \frac{11}{7} r = 44 \text{ dm} \times 7$$

$$\frac{1}{4} r = \frac{4}{1} \text{ dm} \times 7$$

$$r = (4 \times 7) \text{ dm}$$

$$r = 28 \text{ dm}$$

$$\therefore xo = 28 \text{ dm}$$

10. Subtract:

Min	Seconds
45	60 + 20
- 2	45
<u>2</u>	<u>35</u>

$$\begin{array}{r} (60 + 20) - 45 \\ 80 - 45 \\ \hline 35 \end{array}$$



11. Given that,  $x = \frac{2}{3}$  and  $y = 2$ . Simplify:  $\frac{x}{y}$ .

$$\frac{\frac{2}{3}}{2} = \frac{\frac{2}{3} \times \frac{1}{2}}{2 \times 1} = \frac{1 \times 1}{3 \times 1} = \frac{1}{3}$$

12. A guest house has rooms numbered consecutively from **RM:36** to **RM:60**. How many rooms does it have?

No of rooms = (Last - First) + 1

$$\begin{array}{r} \text{RM } 60 \\ - \text{RM } 36 \\ \hline 24 + 1 \end{array}$$

25 rooms

13. Decrease **Shs.18,000** in the ratio of **2:3**.

$$\frac{2}{3} \times \text{Sh } 18,000$$

$$2 \times \text{Sh } 6000$$

Sh 12,000

14. If **O** represents **6** balls. Draw a picture graph to represent **15** balls.

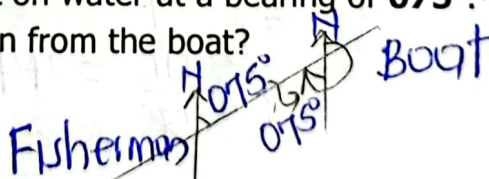
$$\text{No of pictures} = \frac{15}{6} = 2 \frac{1}{2}$$

2  $\frac{1}{2}$  pictures



15. A fisherman saw a boat on water at a bearing of **075°**. What was the bearing of the fisherman from the boat?

$$\begin{array}{r} + 180^\circ \\ + 075^\circ \\ \hline 255^\circ \end{array}$$



16. Find the square of  $y^3$ .

$$(y^3)^2 = y^3 \times y^3$$

$$y^{2(3)}$$

$$y^{(2 \times 3)}$$

$$y^6$$

17. Solve the inequality:  $5 - 3y < 17$ .

$$\begin{array}{l|l|l} 5 - 3y < 17 & -3y > 12 & y > -4 \\ 5 - 5 - 3y < 17 - 5 & -3y > 12 & \\ -3y < 12 & & \end{array} \quad \underline{\underline{y > -4}}$$

18. What value must be subtracted from  $5p$  to get  $2p - 6$ ?

$$\begin{array}{l|l} 5p - (2p - 6) & 3p + 6 \\ (5p - 2p) + 6 & \end{array} \quad \underline{\underline{3p + 6}}$$

19. Find the GCD of 20 and 36.

2	20	36
2	10	18
5	9	

$$\begin{array}{l} \text{GCD} = 2 \times 2 \\ = 4 \end{array}$$

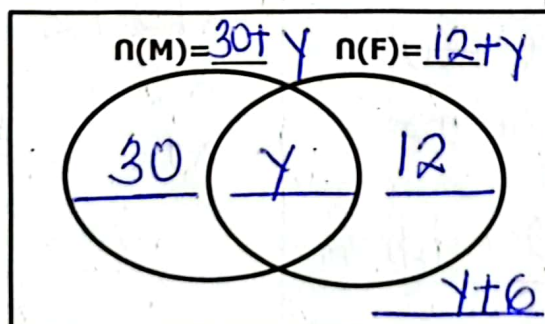
20. A school has 8 dormitories each with 55 students. If the school has a total enrollment of 900 students, find the number of day scholars in the school.

$$\begin{array}{l} \text{No of day scholars} = 900 - (55 \times 8) \text{ pupils} \\ (900 - 440) \text{ pupils} \end{array} \quad \underline{\underline{460 \text{ pupils}}}$$

### SECTION B (60 Marks)

21. At a birthday party, 30 people ate meat (M) only.  $y$  people ate both meat and fish (F). 12 people ate fish only,  $(y + 6)$  people ate neither of the two types of sauces.

(a). Complete the Venn diagram. (1 mark)





$$\begin{array}{l|l} Y+6+12=26 & Y+18-18=26-18 \\ Y+18=26 & \underline{Y=8} \end{array}$$
$$Y + 30 \quad | \quad \underline{\underline{38 \text{ people}}}$$
$$\frac{2}{3} - \left(\frac{1}{4} \div \frac{1}{2}\right) \quad \left| \quad \frac{2}{3} - \frac{1}{2} = \frac{4-3}{6}\right.$$

$$\frac{2}{3} - \left(\frac{1}{4} \times \frac{2}{1}\right) \quad \quad \quad = \frac{1}{6}$$

(b) Workout. 1-0.8. (5 marks)

$$\begin{array}{r} 0.2 \times 0.2 \\ \hline 1 - 0.8 \end{array} \quad \begin{array}{r} 2 \times 2 = 4 \\ 10 \quad 10 \quad 100 \\ \hline 0.04 \end{array} \quad \begin{array}{r} 0.10 \\ 0.8 \\ \hline 0.2 \end{array} \quad \begin{array}{r} 0.04 \\ 0.2 \\ \hline 4 \div 2 \\ 100 \quad 10 \end{array} \quad \begin{array}{r} 100 \times 2 \\ \hline 2 \\ 10 \\ \hline 0.2 \end{array}$$

$$\begin{array}{r} \text{No of pupils} = \frac{\text{Sh } 500,000}{\text{Sh } 25,000} \\ \hline 20 \text{ children} \end{array}$$
$$\begin{aligned} X+2+2 &= 20 \\ X+4 &= 20 \\ X+4-4 &= 20-4 \\ X &= 16 \end{aligned}$$

(b) Find the difference in the total share of boys and girls. (2marks)

Boys	Girls	Difference
Sh 25000	Sh 500,000	Sh 450,000
$\times 2$	$- Sh 50,000$	$- Sh 50,000$
<u>Sh 50,000</u>	<u>Sh 450,000</u>	<u>Sh 400,000</u>

24. A motorist drove an average speed of **72km/hr** from Kampala to Masaka. On his return journey through the same route, he drove at a speed of **96km/hr**. If he spent **25** more minutes on his first journey than the return journey, find the distance from Kampala to Masaka.

(5marks)

Let the distance be  $d$

$$\frac{D}{S} - \frac{D}{S} = \text{Difference}$$

$$\frac{d}{72} - \frac{d}{96} = \frac{25}{60}$$

$$\frac{4d - 3d}{288} = \frac{5}{12}$$

2	96	72
2	48	36
2	24	18
2	12	9
3	6	9
3	3	9
3	1	3
	1	1

$$2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288$$

$$\frac{d}{288} = \frac{5}{12}$$

$$12 \times d = 288 \times 5$$

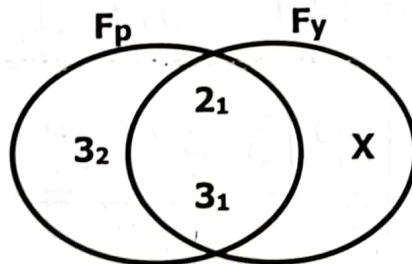
$$12d = 1440$$

$$d = 120 \text{ km}$$

$$d = 120 \text{ km}$$

$$\therefore \text{Distance} = 120 \text{ km}$$

25. Given that the LCM of  $F_p$  and  $F_y$  is 90.



(a) Find the value of  $x$ . (2marks)

$$x = \frac{90 - 30 - 5}{2 \times 3 \times 3} \quad | \quad x = 5$$

(b) Find the GCF of  $F_p$  and  $F_y$ . (2 marks)

$$\text{GCF} = 2 \times 3 = 6$$



(c) List down the multiples of 9 less than 20. (1 mark)

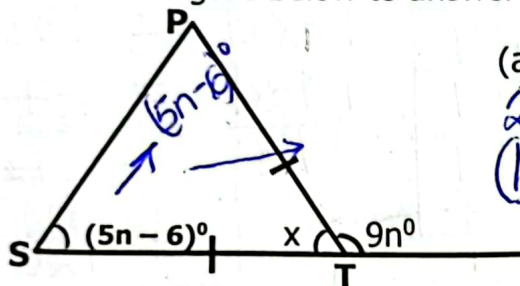
$$M_9 < 20 = \{9, 18\}$$

26. Given that,  $X = 2y - 1$ . Complete the table below. (5marks)

x	3	-1	-5	7
y	2	0	-2	4

X	Y	X	Y	
$X = 2Y - 1$	$2Y - 1 = X$	$X = 2Y - 1$	$2Y - 1 = X$	
$X = (2 \times 2) - 1$	$2Y - 1 = -1$	$X = (2 \times -2) - 1$	$2Y - 1 = 7$	<u><math>Y = 4</math></u>
$X = 4 - 1$	$2Y - 1 + 1 = -1 + 1$	$X = -4 - 1$	$2Y - 1 + 1 = 7 + 1$	
<u><math>X = 3</math></u>	<u><math>2Y = 0</math></u>	<u><math>X = -5</math></u>	<u><math>2Y = 8</math></u>	
	$\frac{2Y}{2} = \frac{0}{2}$		$\frac{2Y}{2} = \frac{8}{2}$	
	$Y = 0$		$Y = 4$	

27. Use the figure below to answer the questions below.



(a) Find the value of  $n$ . (3 marks)

$$\begin{aligned} 2(5n-6)^\circ &= 9n^\circ \\ (10n-12)^\circ &= 9n^\circ \\ 10n-12 &= 9n \\ 10n-12+12 &= 9n+12 \end{aligned}$$

$$\begin{aligned} 10n &= 9n+12 \\ 10n-9n &= 9n-9n+12 \\ n &= 12 \end{aligned}$$

(b) Find the size of angle  $PTS$ . (2 marks)

$$\begin{aligned} x &= 180^\circ - (9n^\circ) \\ PTS &= 180^\circ - (9 \times 12^\circ) \\ PTS &= 180^\circ - 108^\circ \end{aligned}$$

$$PTS = 72^\circ$$

28. (a) What is the additive inverse of the value of  $-3 - 7$ ? (3 marks)

$$\begin{aligned} -3 - 7 \\ -3 + 7 \\ +4 \end{aligned}$$

Let the inverse be  $p$

$$\begin{aligned} p + (-4) &= 0 \\ p + 4 &= 0 \\ p + 4 - 4 &= 0 - 4 \end{aligned}$$

$$p = -4$$

$\therefore$  The inverse of  $-4$  is  $+4$ .

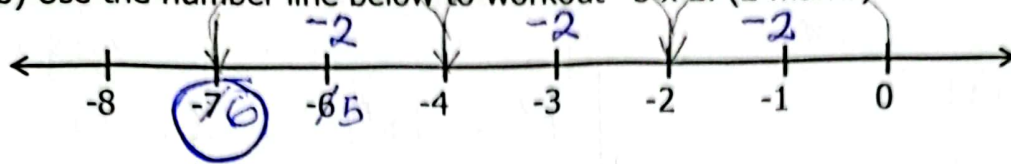


2 jumps

$$-1(-3x+2) \quad | \quad 3 \text{ jumps of } -2 \text{ steps}$$

$$+3x-2$$

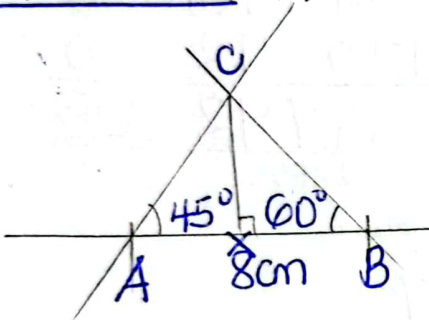
(b) Use the number line below to workout  $-3 \times 2$ . (2 marks)



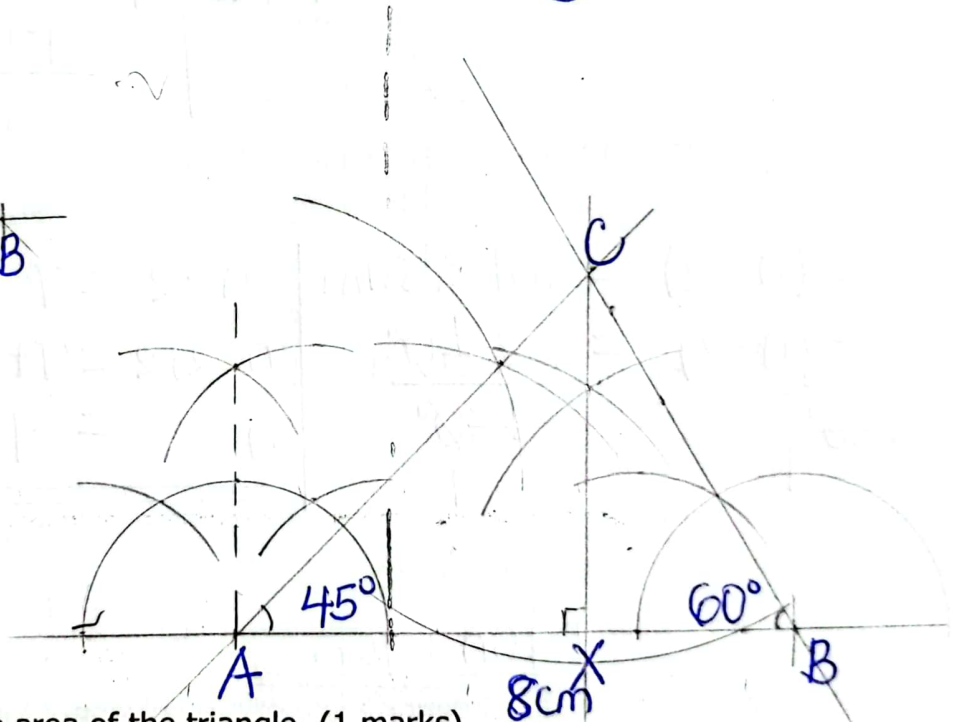
$$\therefore -3 \times 2 = -6$$

29.(a) Using a ruler, pencil and a pair of compasses only, construct a triangle  $ABC$  where  $AB = 8\text{cm}$ ,  $\angle A = 45^\circ$ ,  $\angle B = 60^\circ$ . Drop a perpendicular line from  $C$  to meet  $AB$  at  $X$ . (4 marks)

Sketch



Accurate diagram



(b) Calculate the area of the triangle. (1 marks)

$$A = \frac{B \times H}{2}$$

$$A = \frac{8\text{cm} \times 5\text{cm}}{2}$$

$$A = 4\text{cm} \times 5\text{cm}$$

$$A = 20\text{cm}^2$$

30.(a) Find the principle that can yield **sh.72, 000** in a bank that gives an interest rate of **20%** per annum in a period of **6 months**. (3 marks)

$$P = \frac{100I}{R \times T}$$

$$P = \frac{100 \times \text{sh } 72,000}{20 \times \frac{6}{12}}$$

$$P = \text{sh } 7200 \times 100$$

$$P = \text{sh } 720,000$$

(b) Calculate the amount of money that will be on that account by the end of 6 months. (2 marks)

$$A = P + I$$

$$A = \text{sh } 720,000 + \text{sh } 72,000$$

$$\text{sh } 792,000$$

31. The sum of the interior angles of a regular polygon is **1260°**.

(a) Find the number of sides the polygon has. (2 marks)

$$180^\circ(n-2) = \text{Int } \angle \text{ sum}$$

$$180^\circ(n-2) = 1260^\circ$$

$$\frac{180^\circ}{180^\circ} \quad \frac{180^\circ}{180^\circ}$$

$$n-2 = 7$$

$$n-2+2 = 7+2$$

$$n = 9$$

(b) Name the polygon. (1 mark)

Nongon

(c) Find the size of each interior angle of the polygon. (2 marks)

$$\frac{\text{Ext } \angle}{\text{Int } \angle \text{ sum}}$$

$$\frac{\text{Ext } \angle}{\text{No of sides}}$$

$$\frac{1260^\circ}{9}$$

$$140^\circ$$

Method 2

$$\frac{\text{Ext } \angle}{\text{No of sides}}$$

$$\frac{360^\circ}{9}$$

$$40^\circ$$

$$\frac{\text{Int } \angle}{180^\circ - 40^\circ}$$

$$140^\circ$$

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32. The table below shows the exchange rate at a Forex Bureau.

Currency	Buying rate (Ugsh.)	Selling price (Ugsh)
Us Dollar (\$)	3700	3800
British Pound (£)	5100	5200
Kenya sh. (Ksh)	36	37

(b) A trader had **5000** Kenyan shillings. How much money did he get in Uganda shillings? (2 marks)

FBL

Ksh 1 → Ugsh 36

Ksh 5000 → Ugsh (5000 × 36)

= Ugsh 180,000

(b) A tourist had 7600 pound sterling. How much money in Us dollars did he get from the Fore Bureau? (3 marks)

FBL

£1 → Ugsh 5100

£7600 → Ugsh (7600 × 5100)

Ugsh 38,760,000

LSE

Ugsh 3800 → US\$ 1

Ugsh 38,760,000 → END -----

Ugsh 38,760,000  
~~Ugsh 3800~~  
10,200 US  
dollars