BROAD EXAMINATIONS®

P.7 MATHEMATICS EXAMINATION

PRE – PLE TRIAL SET I 2023

Time allowed: 2 hours 15 minutes.

Random No.						Personal No.		

Candidate's Name:.....

Candidate's Signature.....

District Name: .....

Read the following instructions carefully:

1. This paper is made up of two sections: **A** and **B**.
2. Section **A** has **20** questions (**40 Marks**)
3. Section **B** has **12** questions (**60 Marks**)
4. Answer **ALL** questions in both sections **A** and **B**.
5. All answers must be written in the space provided in blue or black ball point pens and ink. **Only diagrams should be done in pencil.**
6. Unnecessary crossing of answers will lead to loss of marks.
7. Any handwriting, which cannot be easily read, may lead to loss of marks.
8. Do **not** fill anything in the boxes indicated for Examiners' use only.

FOR EXAMINERS' USE ONLY		
PAGES	**MARKS**	**SIGN**
Page 2		
Page 3		
Page 4		
Page 5		
Page 6		
Page 7		
Page 8		
TOTAL		

Teacher's comment to the learner

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Approved by:

Team Head Mathematics Department

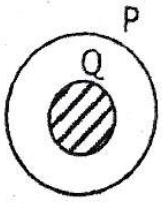
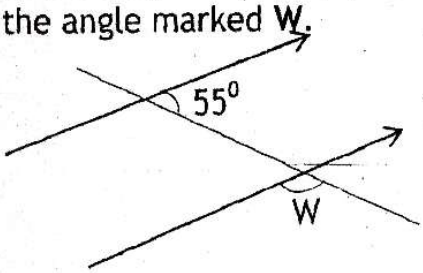
PLE REVISION TIPS

In groups of fives, revise with your friends simple work from P.4 class.

Read about:

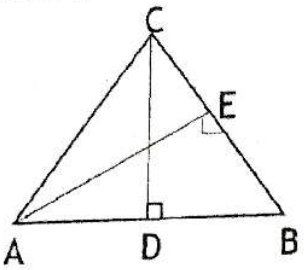
- 3- Dimensional figures and their properties
- Tally marks under data handling
- Addition and subtraction of time
- 4 by 4 magic squares and magic triangles

SECTION .A. (40 Marks)

1.	Add: 43 + 16	2.	Change 13_{five} to base ten.
3.	Work out the LCM of 12 and 15	4.	Find the range of 3, 7, 8, 5 and 6.
5.	A trader sold a dozen picfare books at sh.1200 each book. How much money did the trader get after selling the books?	6.	Describe the shaded region in the figure below. 
7.	In the diagram below, find the size of the angle marked W. 	8.	What number is increased by 10% to become 22?
9.	A driver drove his car at a speed of 20 metres every second. What was his speed in km/h?	10.	Solve: m + 3 = 1 (mod.7)

11. **Simplify: 3x - (x + 4)**

12. In the diagram below, AB = 8cm, BC = 12cm and AE = 4cm.



Find the length DC.

13. Write the time 3:50pm in 24 hour clock system.

14. Round off 18.82 to the nearest whole number.

15. If y = x - 3, complete the table below.

x	-3	0	____
y	-6	____	4

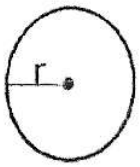
16. Using a ruler, a pencil and a pair of compasses only, construct an angle of 15^0

17. Express 14 as a product of its prime factors.

18. Set G = {2, 0, 5, 9, 7}. Find the number of proper subsets in set G.

19. Given that $\frac{2}{3}$ of a kilo of maize flour costs sh.1600, find the cost of 4kg of maize flour at the same rate.

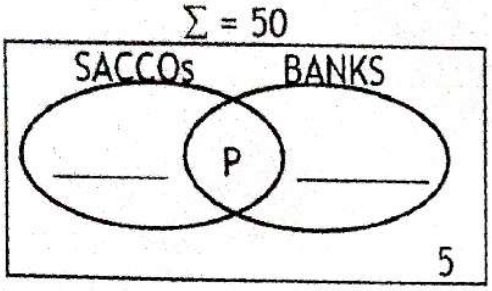
20. The diagram below is a circular end of a cylindrical tin whose circumference is 88 metres. Find its radius.



SECTION .B. (60 Marks)

21. In a trading centre of 50 traders, 32 have accounts in SACCOs (S), 34 have them in Banks (B), some (P) have them in both institutions while 5 do not have accounts at all.

(a) Represent the above information in the venn diagram below.



(b) How many traders have accounts in both institutions?

(c) If a trader is selected at random to be a business representative, find the probability of choosing one who has an account in SACCOs only.

(05 Marks)

22. (a) **Work out:** $1\ 1\ 0_{two} - 1\ 1_{two}$

11_{two}

(b) If $102p = 201_{five}$, find the unknown base p.

$102_p = 201_{five}$

$(1 \times p^2) + (0 \times p^1) + (2 \times p^0) = (2 \times 5^2) + (0 \times 5^1) + (1 \times 5^0)$

$p^2 + 0 + 2 = 2 \times 25 + 0 + 1$

$p^2 + 2 = 51$

$p^2 + 2 - 2 = 51 - 2$

$\sqrt{p^2} = \sqrt{49}$

$p = 7$

(05 Marks)

23. Study the exchange rates below and answer the questions that follow;

1 United States dollar (US$1) = Ugsh.3500
1 Kenya shilling (Ksh.1) = Ugsh.30
1 British pound Sterling (£.1) = Ugsh.4000

(a) A man has 330 US dollars and Ksh.5500. How much money in Uganda shillings does he have altogether?

(b) A phone costs Ugsh.640,000. Find its cost in pounds.

(05 Marks)

24. The number of pupils in P.1, P.2, P.3 and P.4 at Excel Junior School are 66, 54, 72 and 48 respectively.

(a) Which class has the least number of pupils?

(b) How many more pupils are there in P.3 than in P.1?

(c) Work out the average number of pupils in the four classes.

(05 Marks)

25. (a) Using a ruler, a pencil and a pair of compasses only, construct a triangle PLE where line PL = 7cm, angle PLE = 75^0 and angle EPL = 45^0

(b) Measure line LE.

(05 Marks)

26. (a) **Work out:** 4.36 - 2.9

$$\begin{array}{r} 4.36 \\ -2.90 \\ \hline 1.46 \end{array}$$

(b) **Simplify:** 7 - 12.12 + 6.3

$$(7+6.3)-12.12$$
$$13.3-12.12$$
$$13.30$$
$$\begin{array}{r} -12.12 \\ \hline 01.18 \end{array} \quad 1\,18$$

(05 Marks)

27. Today, Monday 14th September, teachers at Pole pole Primary School have received their salaries. They will receive their next salary after 30 days. On which day and date will they receive their next salary?

(04 Marks)

28. **Solve;**

(a) 3a - 5 = 19

$3a-5=19$

$3a-5+5=19+5$

$3a=24$

$\frac{3a}{3}=\frac{24}{3}$

$a=8$

(b) 5k - 3 = k + 5

$5k-3=k+5$

$5k-k-3=k-k+5$

$4k-3=5$

$4k-3+3=5+3$

$4k=8$

$\frac{4k}{4}=\frac{8}{4}$

$k=2$

(05 Marks)

29. A water tank is 80cm long, 60cm wide and 90cm high.

(a) Find its volume.

$V = L \times W \times H$

$80cm \times 60cm \times 90cm$

$V = 432{,}000\,cm^3$

(b) How much water does it hold when it is $\frac{5}{9}$ full?

$\frac{5}{9} \times 432{,}000cm^3$

$5 \times 48{,}000cm^3$

$240{,}000cm^3$

$C = \frac{V}{1000cm^3}$

240 litre

(05 Marks)

30. Sarah, Susan, Barbra and Monius have an average age of 22 years. Sarah is n years old, Susan is 5 years older than Sarah, Barbra is 19 years old and Monius is n+4 years old.

(a) Find the value of n.

$\frac{\text{Sum of data}}{\text{No of data}} = \text{A.V}$

$\frac{n+n+5+19+n+4}{4} = 22$

$\frac{n+n+n+5+19+4}{4} = 22$

$4 \times \frac{3n+28}{4} = 22 \times 4$

$3n+28 = 88$

$3n+28-28 = 88-28$

$\frac{3n}{3} = \frac{60}{3}$

$n = 20$

(b) Find Susan's age.

$n+5$

$(20+5)$ years

25 years

(05 Marks)

31. A motorist left town K at 8:30am at a speed of 35km/h. After a 2 hour drive, the car got a problem which took him 30 minutes to solve. He then continued to town L at a speed of 40km/h reaching town L at 12:15pm. He immediately returned to town K at a constant speed of 96km/h.

(a) How far is town L from town K?

Distance before breakdown

$D = S \times T$

$35\text{km/h} \times 2\text{h}$

70km

Duration after breakdown

12 15

−11 00

01 15

1hr and 15mins

Distance after breakdown

$D = S \times T$

$40\text{km/h} \times 1\frac{15}{60}\text{h}$

$40\text{km/h} \times \frac{5}{4}$

50km

Total distance

70km + 50km

120km

(b) Calculate the average speed of the motorist for the whole journey.

Time for return journey

$T = \frac{D}{S}$

120km

96 km/h

$\frac{5}{40}$ h

$\frac{32}{4}$

$1\frac{1}{4}$ hours

$\text{AVS} = \frac{\text{T.D}}{\text{T.T}}$

$\frac{120\text{km} + 120\text{km}}{2\text{h} + 1\frac{1}{4}\text{h} + 1\frac{1}{4}\text{h}}$

$\frac{240\text{km}}{5\text{h}}$

48 km/h

(05 Marks)

32. The pictograph below shows the number of boxes of books received by UPE Schools in a Sub county.

SCHOOL	NO. OF BOXES.
Ntusi	☒ ☒ ☒
Nzozi	☒ ☒ ▽
Busega	☒ ☒ ☒ ☒
Bitaabo	☒ ☒ ▽

Given that ☒ represents 24 books and ▽ represents12 books,

(a) Find the number of books Busega Primary School received.

(b) How many more books did Ntusi get than Bitaabo Primary School?

(c) Work out the total number of books the four schools received.

END (06 Marks)