# THE SIPRO PRE - PLE SET V 2022

## MATHEMATICS

Time Allowed: *2 Hours 30 Minutes*

| Index No. | Random No. | | | | | | Personal No. | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Candidate's Name: _____

Candidate's Signature: _____

School Random No. _____

District ID: _____

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### READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. This paper has two sections: **A** and **B**.
2. Section **A** has **20** questions (**40 Marks**).
3. Section **B** has **12** questions (**60 Marks**).
4. Attempt all questions in both sections. All answers to both sections **A** and **B** must be written in the spaces provided.
5. All answers must be written in blue or black ball point pens or ink. Only diagrams and graph work must be done in pencil.
6. Unnecessary alteration of work will lead to loss of marks.
7. Any handwriting that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the boxes indicated:

   **"FOR EXAMINER'S USE ONLY"**

### For Examiner's Use Only;

| PAGES | MARKS | INITIALS |
|---|---|---|
| Page 1 | | |
| Page 2 | | |
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| Page 5 | | |
| Page 6 | | |
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| Page 9 | | |
| Total | | |

**Please turn over**

# SECTION A: 40 MARKS
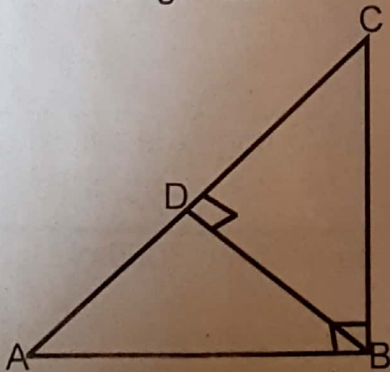## Attempt all questions in this section
### Questions 1 to 20 carry two marks each.

**1.** **Work out:** $20 \div 5$

**2.** Write **34,808** in words.

**3.** **Solve:** $8 + n = 30$

**4.** **Work out:** $^-6 - ^-4.$

**5.** How many **proper** subsets are in a set with $\left(\dfrac{1}{4} \div \dfrac{1}{12}\right)$ elements?

**6.** In a box, there are 60 pens. The probability of picking a pen randomly from the box is $\dfrac{2}{3}$. How many pens are not picked?

**7.** Two angles are complementary. If one of them is $(m + 20)^0$, find the other angle.

**8.** Find the **highest** common factor of 24 and 30.

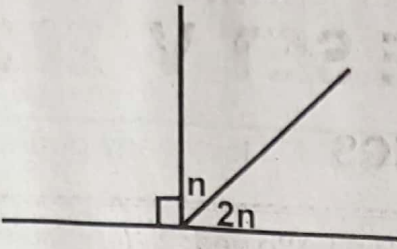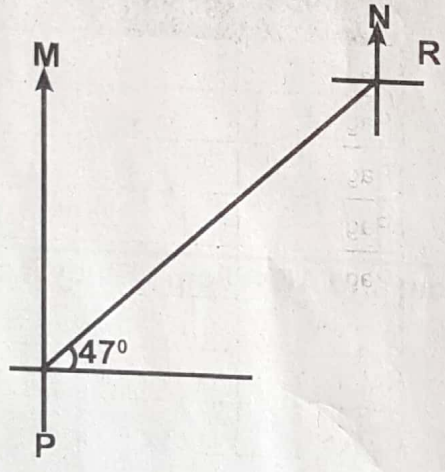**9.** Arrange the following integers in ascending order;
$^+5, 0, ^+3, ^-9, ^-4, ^-7$

| | |
|---|---|
| 10. | Given that ⚽ represents 2 balls, **draw** pictures to represent 7 balls. |
| 11. | In a P.7 class, the ratio of girls to boys is 2:3. How many pupils are in the class if there are 24 girls? |
| 12. | A minute hand of a clock makes $2\frac{1}{2}$ **revolutions** to cover the time of a Mathematics examination. If the examination started at 10:30a.m, when did it end? |

| | | | |
|---|---|---|---|
| 13. | Express **0.00965** in standard notation. | 14. | The exterior angle of a regular polygon is $45^0$. Calculate the number of sides of the polygon. |

| | |
|---|---|
| 15. | In the triangle, **AB = 6cm, BC = 4cm and AC = 8cm**. Study it carefully and find the length **BD**.

 |

| 16. Find the value of **n**. | 17. Pupils are standing in a **line** such that Rhyan is the **5th** from either side of the line. Find the number of pupils on the line. |
|---|---|

**16.** Find the value of **n**.

n

2n

**18.** A car uses 6 litres of fuel to cover a distance of **120km**. Find the capacity of fuel needed to cover **40km**.

**19.** In the figure below, find the **bearing** of town **P** from **R**.

N

M

R

47°

P

**20** How many bottles of 1.5 litres can be got from 3000ml?

## SECTION B: 60 MARKS

*Marks for each part of the question are indicated in the brackets.*

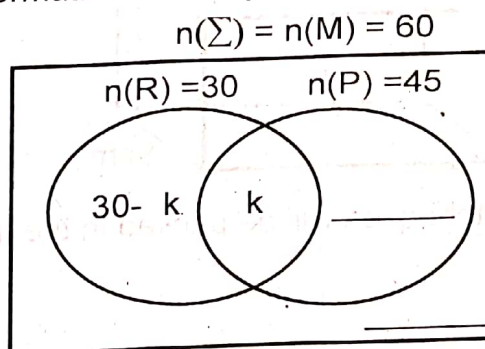| | |
|---|---|
| 21.a) | A bucket full of sand weighs **6.5kg**. If the empty bucket weighs **0.50kg**, what will be the weight of the bucket when it is $\frac{2}{3}$ full of sand? |
| | *(02 marks)* |
| (b) | A taxi with **14** passengers and the driver all weigh **1800kg**. If the weight of each person is **72kg**, find the weight of the vehicle. |
| | *(03 marks)* |
| 22. | In a restaurant, all the 60 customers ordered for matoke(M), 30 customers ordered rice(R) and matoke, 45 customers ordered posho(P) and matoke, 9 customers ordered only matoke while "K" customers ordered for all the three kinds of food. |
| (a) | Use the above information to **complete** the Venn diagram below. |

$$n(\Sigma) = n(M) = 60$$

n(R) =30     n(P) =45

30- k     k     _____

_____

*(02 marks)*

| | | |
|---|---|---|
| (b) | How many customers ordered for all the three kinds of food? | |
| | | **(03 marks)** |

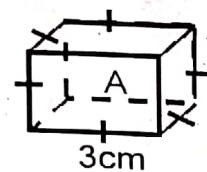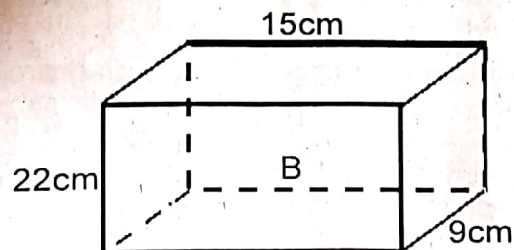| 23 | Find the **sum** of the place value of 5 and 9 in 2597. | (b) | **Work out:** $\quad 2\ \ 3\ \ 1_{\text{five}}$ $\underline{+\ 1\ \ 4\ \ 2_{\text{five}}}$ |
|---|---|---|---|
| | **(03 marks)** | | **(02 marks)** |

| 24. | Kalema drove a car from town **A** to town **B** at a speed of **90km/h** in **3** hours. He rested at town **B** for an hour and drove back at an average speed of **54km/h**. Calculate Kalema's average speed for the whole journey.

**(04 marks)** |
|---|---|

| 25. | Nakimera Angella was told to pack matchboxes **(A)** into the big box**(B)**. |
|---|---|

15cm

22cm     B

9cm

A

3cm

(a)   How many matchboxes will be packed in the first layer of box B?

**(02 marks)**

| | | | |
|---|---|---|---|
| (b) | How **many** layers of matchbox(A) will fill box(B)? | (c) | Calculate the **volume** of the space left after filling box(B) with the maximum number of matchboxes. |
| | *(01 mark)* | | *(03 marks)* |

| 26 | Using a ruler, a pencil and a pair of compasses only, construct a regular **hexagon** in a circle of radius **4cm**. |
|---|---|
| | *(04 marks)* |

| 27. | Below is a travel **timetable** of Baby Coach which travelled from **Kampala** to **Iganga**. *Study and use it to answer the questions that follow.* |
|---|---|

| Town | Arrival time | Departure time |
|---|---|---|
| Kampala | | 06 : 15hrs |
| Mukono | 0 : 700 hr | 07 : 10hr |
| Lugazi | 07 : 45hr | 07 : 55hr |
| Jinja | 08 : 25hr | 08 : 35hr |
| Musita | 08 : 55hr | 09 : 05hr |
| Iganga | 09 : 35hr | |

(a) Express the **arrival** time at Iganga in a 12 hour clock.
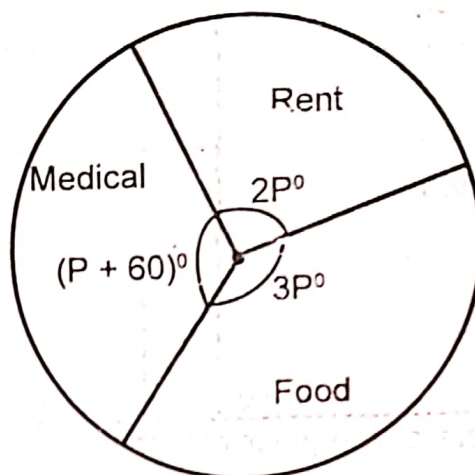
*(01 mark)*

| (b) | If the bus travelled at 60km/h from Kampala to Jinja, Find the distance it covered. | (c) | Work out the **total time** the bus took travelling from Kampala to Iganga. |
|---|---|---|---|
| | *(03 marks)* | | *(02 marks)* |

**28.a)** The interior angle of a regular polygon is **60⁰ more** than its exterior angle. How many sides has the polygon?

*(03 marks)*

**(b)** Name the polygon whose interior angle sum is 720⁰.

*(03 marks)*

**2.9** In a class, $\frac{1}{3}$ of the candidates ate Matoke, $\frac{1}{2}$ ate Posho, $\frac{1}{2}$ of the remainder ate Cassava and 6 candidates ate rice. Find the number of candidates in the class.

*(05 marks)*

**30.** The pie chart below shows how Mr. Okello spent his monthly salary. Study and use it to answer the questions that follow.



(a) Find the value of P in degrees.

*(02 marks)*

(b) If he spends sh. 200,000 more on food than medical, find how much he spends on rent.

*(03 marks)*

**31.a)** Solve for m:

$3(2m - 1) - 4(m + 3) = 1$

*(02 marks)*

(b) Solve and give the solution set for $6 + 3y < 15$.

*(02 marks)*

**32.** The table below shows the denominations, number of notes and amount. Use it to complete the blank spaces correctly with correct working.

| Denomination | Number of notes | Amount |
|---|---|---|
| Shs. 1,000 | 15 | Shs. 15,000 |
| Shs. 2,000 | 10 | Shs. _____ |
| Shs. 5,000 | _____ | Shs. 65,000 |
| Shs. _____ | 5 | Shs. 50,000 |
| Shs. _____ | 4 | Shs. _____ |
| | Total | Shs. 230,000 |

(05 marks)