

# THE SIPRO PRE - PLE SET IV 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: \_\_\_\_\_

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 |       |          |
| Page 3 |       |          |
| Page 4 |       |          |
| Page 5 |       |          |
| Page 6 |       |          |
| Page 7 |       |          |
| Page 8 |       |          |
| Page 9 |       |          |
| Total  |       |          |

Please turn over



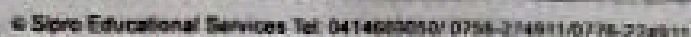
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Attempt all questions in this section.  
Questions 1 to 20 carry two marks each.

**Questions 1 to 20 carry two marks each.**

7. Using a ruler and a pencil, draw a line segment  $PQ = 6.0\text{cm}$ .

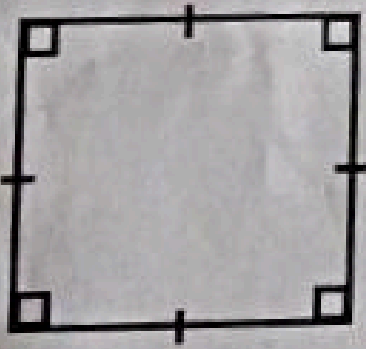


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|    |   |   |
|----|---|---|
| 8  | Construct an angle of $240^\circ$ using a ruler, a pencil and a pair of compasses only. |   |
| 9  | Work out: $2 + 0.5$   | 10 Find the average of $k$ , $0$ , $3k$ , $k-2$ and $12$ .  |
| 11 | Find the L.C.M of $12$ and $30$ .   | 12 On Tuesday morning, the cost of $5$ books was sh $10,000$ . In the evening, the cost of each book had increased by sh $250$ . How many such books could one buy with sh. $20250$ ? |



|    |   |    |   |
|----|---|----|---|
| 13 | Isa ran 200 metres in 20 seconds. How many kilometres did he cover every hour?  | 14 | Given that $\Sigma = \{0, 1, 3, 4, 5\}$ and set $K = \{1, 3, 4\}$ . Find $n(K)$ .                                   |
| 15 | In a class, 20% of the pupils are absent. How many pupils are in the class if 40 were present?  | 16 | Write 0.00086 in standard form.   |
| 17 | How many lines of folding symmetry has the figure below?<br><br> | 18 | What number has been expanded to give: $(6 \times 10^3) + (2 \times 10^2) + (9 \times 10^0) + (4 \times 10^{-1})$ ? |



19 Work out:  $2 + 4 =$  \_\_\_\_\_ (finite 5)

20 Solve:  $3k + 3 = k + 7$

**SECTION B: 60 MARKS**

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

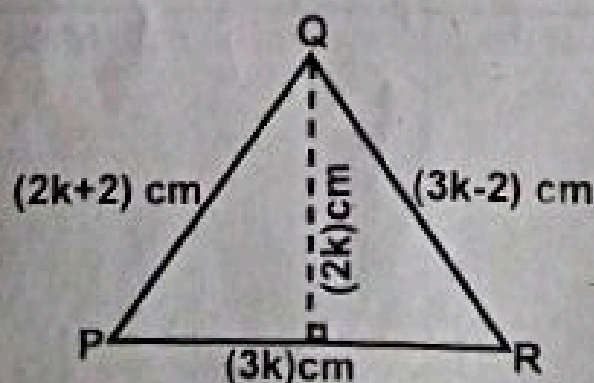
21 a) Work out the square root of 441.

(02 marks)

b) Mary and David set off a journey from point P to point Q. Mary's stride is 40cm while that of David is 30cm. If they all stepped at point Q at the same time, how many strides did David make?

(02 marks)

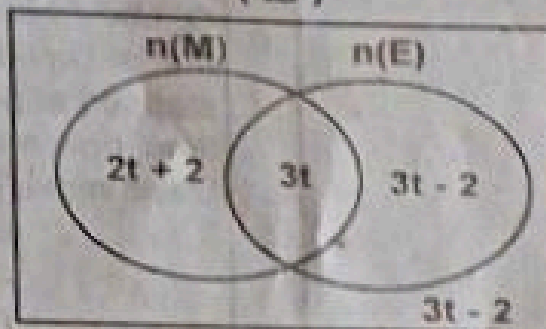
22 The figure below is of an isosceles triangle. Use it to answer the questions that follow.



|                         |  |
|-------------------------|--|
| a) Find the value of k. | b) Calculate the area of the triangle PQR. |
| (02 marks)              | (03 marks)                                 |

23. The venn diagram below shows the number of pupils who like Mathematics (M) and English (E) at Nankya Highway Primary School-Mayuge. Those who like mathematics are equal to those who don't like it. Use the venn diagram to answer the questions that follow.

(Σ)



- a) Find the value of t.
- (02 marks)

- b) Find the **percentage** of the pupils who like both Mathematics and English.

(03 marks)



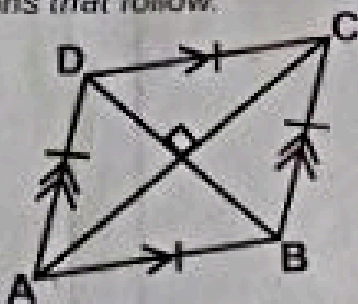
|    |   |  |
|----|---|--|
| 24 | A rectangular tank 8cm long and 6cm wide holds $960\text{cm}^3$ of water full to capacity.        |  |
| a) | If $528\text{cm}^3$ of water was removed, find the height of the water that remained in the tank. | b) If the remaining water was poured into another rectangular tank of base area $72\text{cm}^2$ , find its height. |
|    | (02 marks)  | (03 marks)   |

25 Study the table below and use it to answer the questions that follow.

| Marks | Tally | Frequency |
|-------|-------|-----------|
| 60    | _____ | 3         |
| 65    | /// / | _____     |
| 85    | ///   | 4         |
| 50    | //    | 2         |
| 70    | ///   | 3         |

|    |                           |    |                     |
|----|---------------------------|----|---------------------|
| a) | Complete the table above. | b) | Find the mean mark. |
|    | (02 marks)                |    | (03 marks)          |



|    |  |                        |
|----|--|------------------------|
| 26 | Mutesi was born in <b>25BC</b> and died in <b>40AD</b> . How old was she when she died?  |                        |
| a) |  |                        |
|    | (03 marks)   |                        |
| b) | A teacher awarded some marks for every correct sum and deducted 2 marks for every sum in an exercise of 25 sums. If a pupil got 20 correct sums and scored <b>70 marks</b> , how many marks did the teacher award for every correct sum? |                        |
|    | (03 marks)   |                        |
| 27 | By selling a radio at sh 120,000, a trader made a profit of 20%.   |                        |
| a) | Find the price at which the trader bought the radio.   | b) Increase 800 by 10% |
|    | (03 marks)   | (02 marks)             |
| 28 | <p>ABCD is a rhombus whose diagonals AC is 24cm and BD is 10cm. Use it to answer the questions that follow.</p>                                      |                        |





|    |                    |    |                          |
|----|--------------------|----|--------------------------|
| a) | Work out its area. | b) | Calculate its perimeter. |
|    | (02 marks)         |    | (03 marks)               |

29 A head teacher departed from home at a speed of 80km/h to school for 2 hours, he took 30 minutes briefing his teachers and then continued to the district headquarters for a term opening meeting which is 60km from the school for  $1\frac{1}{2}$  hours.

|    |                                      |    |  |
|----|--------------------------------------|----|--|
| a) | How far is the school from his home? | b) | Calculate his average speed for the whole journey. |
|    | (02 marks)                           |    | (03 marks)   |

30 Given that  $y = 2x + 1$ , complete the table below correctly.

|   |    |       |       |       |       |       |
|---|----|-------|-------|-------|-------|-------|
| x | 0  | 1     | _____ | 3     | _____ | 4     |
| y | -1 | _____ | 3     | _____ | 5     | _____ |

(05 marks)



- 31 The table below shows the money which was banked by the Manager of Shell Fuel Station Gayaza in Equity bank. Study and use it to answer the questions that follow.

| Denominations | Number of notes | Amount     |
|---------------|-----------------|------------|
| sh 50,000     |                 | sh 600,000 |
| sh 20,000     | 100             | sh         |
| sh            | 100             | sh 100,000 |
| sh 5000       | 50              | sh 250,000 |
| sh 2000       | 20              | sh 40,000  |
| Total         |                 | sh         |

(04 marks)

- 32 Town B is on bearing of  $240^\circ$  from town A, a distance of 250km and town B is on bearing of  $300^\circ$  from town a distance of 300km.

- a) Draw a sketch diagram to show the three towns.

(01 mark)

- b) Draw an accurate diagram to show the three towns.

(04 marks)



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