GREENLAWNS SCHOOL, WORLI
MATHEMATICS
Final Examination – 2024

STD: VIII **Marks: 80**
Date: 12/02/2024 **Time: 2½hr**

Attempt **all** questions from **Section A** and **any four** questions from **Section B All *working, including rough work, must be clearly shown, and must be done on the same sheet as the rest of the answer.***

Omission of essential working will result in loss of marks. The intended marks for questions or parts of questions are given in brackets [ ]

SECTION A

(*Attempt **all** questions from this Section)*

Question 1. Choose the correct answers to the questions from the given options. **[15]**

(Do not copy the questions, write the correct answer only)

i. The multiplicative inverse of 7^{-2} is:

A. 7^2 **B.** 7

C. $1/7^2$ **D**. 1/7

ii. A cylindrical box has ____ curved surface and ____ circular faces, which are identical.

A. One, One **B.** One, two

C. two, one **D.** two, two

iii. The area of a rhombus is 240 cm^2 and one of the diagonals is 16 cm. Find the other diagonal.

A. 16 cm **B.** 20 cm

C. 30 cm **D.** 36 cm

iv. Double bar graphs display _____ sets of data simultaneously.

A. Four **B.** Three

C. Two **D.** No

v. _____ gives the number of times a particular entry occurs.

A. Organisation of data **B.** Collection of Data

C. Representation of Data **D.** Frequency distribution table

vi. If a coin is flipped in the air, what is the probability of getting a tail?

A. 0 **B.** ½

C. 1 **D.** 2

vii. A die is thrown. What is the probability of getting even prime number?

A. ⅙ **B.** ½

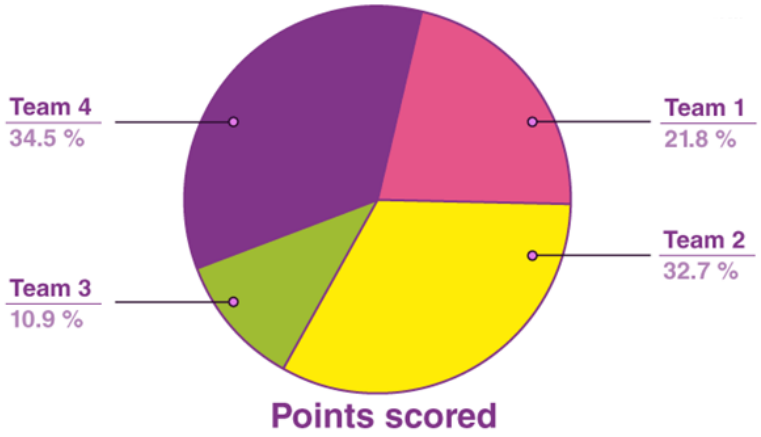
C. ⅓ **D.** ⅕

viii. If the sum of interior angles of a regular polygon is 540°. Find the name of the polygon.

A. Quadrilateral **B.** Pentagon

C. Hexagon **D.** Septagon

ix. Observe the diagram, given below and find the correct answer to the following MCQs.



1. What is the average score of all the teams?

A. 22% **B.** 25%

C. 27% **D.** 29%

2. Which team has the second-highest score?

A. Team 1 **B.** Team 2

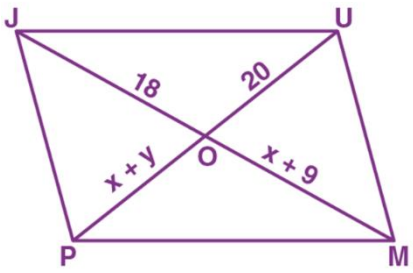
C. Team 3 **D.** Team 4

Question 2

a. Find the value of x for which $2^x \div 2^{-4} = 4^5$ **[2]**

b. **Calculate the height of a cuboid which has a base area of 180 cm^2 and volume is 900 cm^3.** **[2]**

c. PJUM is a parallelogram. Its diagonal meet at point O. Find x and y. **[2]**



d. Factorize: $x^2 + 15x + 26$ **[2]**

e. Factorize: $14(3x - 5y)^3 + 7(3x - 5y)^2$ **[2]**

Question 3

a. If $x^2 + \frac{1}{x^2} = 23$, evaluate:

(i) $x + \frac{1}{x}$ (ii) $x - \frac{1}{x}$ **[3]**

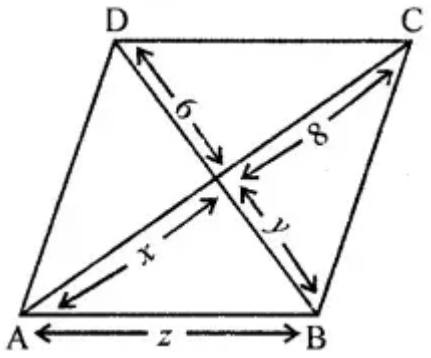
b. Following are the number of members in 25 families of a village:
6, 8, 7, 7, 6, 5, 3, 2, 5, 4, 3, 3, 2, 5, 6, 8, 7, 7, 4, 3, 6, 6, 6, 7, 5.
Make a frequency distribution table for the data using class intervals
0 – 2, 2 – 4, etc**.** **[3]**

c. When four consecutive integers are added, the sum is 46. Find the integers. **[4]**

Question 4

a. Construct a quadrilateral ABCD where AB = 4.5 cm BC = 5.5 cm CD = 4 cm AD = 6 cm AC = 7 cm. **[3]**

b. In the given figure, ABCD is a rhombus, find the values of x, y and z **[3]**



c. Simplify: (i) $(x^2 + 3)(x - 3) + 9$
(ii) $(x + 3)(x - 3)(x + 4)(x - 4)$ **[4]**

SECTION B

(*Attempt **any four** questions from this section)*

Question 5

a. Simplify $[25 \times t^{-4}] / [5^{-3} \times 10 \times t^{-8}]$ **[3]**

b. Divide: $a^3 + 2a^2 + 2a + 1$ by $a^2 + a + 1$ **[3]**

c. A square and a rectangle have the same perimeter. Calculate the area of the rectangle if the side of the square is 60 cm and the length of the rectangle is 80 cm. **[4]**

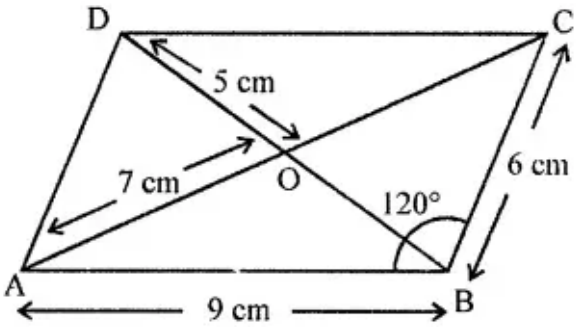
Question 6

a. A lawnmower takes 750 complete revolutions to cut grass on a field. Calculate the area of the field if the diameter of the lawnmower is 84 cm and the length is 1 m. **[3]**

b. Solve the following inequations and graph their solutions on a number line **[3]**

$-1 < (x / 2) + 1 \leq 3, x \in I$

c. In the given figure, ABCD is a parallelogram. Complete each statement along with the definition or property used. **[4]**



(i) AD = …….. (ii) DC = ……..

(iii) ∠DCB = …….. (iv) ∠ADC = ……..

(v) ∠DAB = …….. (vi) OC = ……..

(vii) OB = ……. (viii) m∠DAB + m∠CDA = …..

Question 7

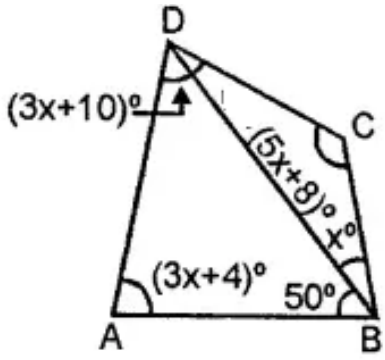
a. Subtract the sum of 3a + 2b – c and 5b – 6a + 2ab from the sum of 9b -11ab and -4a + 21ab **[3]**

b. From the adjoining figure, find **[3]**

(i) x

(ii) ∠DAB

(iii) ∠ADB



c. Mr Khurana has two kitchen appliance stores. He compared the sales of two stores during a month and recovered as given below: **[4]**

Item	Number of Items Sold	
	Store A	Store B
Grill	40	20
Toaster	35	15
Oven	30	30
Blender	40	30
Coffee maker	35	40

Represent the above data by a double bar graph.

Question 8

a. The ratio between an exterior angle and the interior angle of a regular polygon is 1: 5. Find
(i) the measure of each exterior angle
(ii) the measure of each interior angle
(iii) the number of sides in the polygon. **[3]**

b. A box contains 600 screws, one tenth is rusted. One screw is taken out at random from the box. Find the probability that it is
(i) a rusted screw
(ii) not a rusted screw **[3]**

c. The number of employees in a office, speaking different languages is given below. Display the data in a pie chart. **[4]**

Language	Hindi	English	Marathi	Tamil	Bengali
Number of students	28	12	9	7	4

Question 9

a. Construct a square whose one side is 4.3 cm. **[3]**

b. A rectangular pit 1.4 m long, 90 cm broad and 70 cm deep was dug and 1000 bricks of base 21 cm by 10.5 cm were made from the earth dug out. Find the height of each brick. **[3]**

c. Sarita borrowed Rs. 18000 from Vimla at 3% per annum simple interest for 2 years. If she had borrowed this sum at 3% per annum compound interest, what extra amount would she have to pay? **[4]**

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