



# GYANODAYA GURUKUL

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## Half Yearly Examination – (2019-20)

Class: - VIII  
Subject: - MATHS

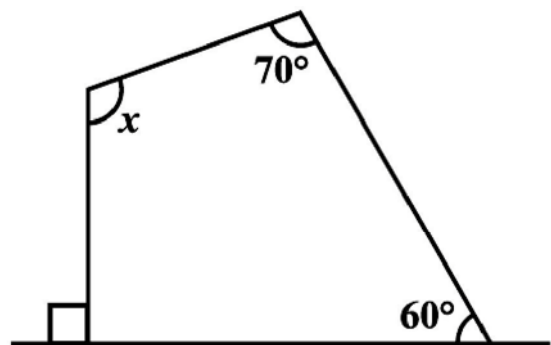
F.M.: - 80  
Duration: - 3 hr

### General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains **30** questions divided into four Sections A, B, C and D.
- (iii). **Section A** comprises of 6 questions of **1 mark** each. **Section B** comprises of 6 questions of **2 marks** each. **Section C** comprises of 10 questions of **3 marks** each and **Section D** comprises of 8 questions of **4 marks** each.
- (iv). Use of Calculators is not permitted

### SECTION – A

1. Write the additive inverse of:  $-\frac{4}{5}$ .
2. Solve:  $7x - 9 = 16$ .
3. Find  $x$  in the adjoining figure:
4. Find the square of the number 42.
5. Range of the data = \_\_\_\_\_.
6. Find the cube of 0.3.



### SECTION – B

7. Find two rational numbers between  $\frac{-3}{2}$  and  $\frac{5}{3}$ .
8. How many sides does a regular polygon have if the measure of an exterior angle is  $24^\circ$ ?
9. Find the cube root of 10648 by prime factorisation method.
10. Find the product of  $(2x^2 + 3x - 7)(3x^2 - 5x + 4)$ .
11. If  $(x + \frac{1}{x}) = 4$ , find the value of  $(x^2 + \frac{1}{x^2})$ .

12. The following marks (out of 50) obtained in Mathematics by 60 students of Class VIII:

21, 10, 30, 22, 33, 5, 37, 12, 25, 42, 15, 39, 26, 32, 18, 27, 28, 19, 29, 35, 31, 24, 36,  
18, 20, 38, 22, 44, 16, 24, 10, 27, 39, 28, 49, 29, 32, 23, 31, 21, 34, 22, 23, 36, 24, 36,  
33, 47, 48, 50, 39, 20, 7, 16, 36, 45, 47, 30, 22, 17.

Using tally marks make a frequency table with intervals as 0–10, 20–30 and so on.

### SECTION – C

13. Represent these numbers on the number line: (i)  $-\frac{6}{5}$  (ii)  $-\frac{7}{8}$  (iii)  $\frac{12}{5}$

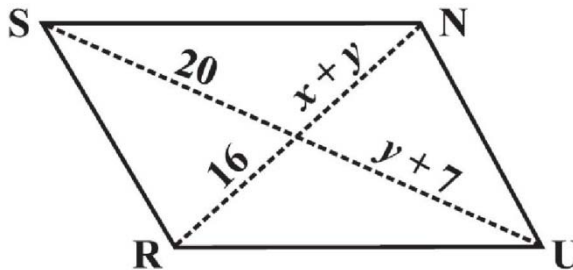
14. Factorise:  $-ab(x^2 + y^2) - xy(a^2 + b^2)$ .

15. A steamer goes downstream from one port to another in 9 hours. It covers the same distance upstream in 10 hours. If the speed of the stream be 1 km/h, find the speed of the steamer in still water and distance between the ports.

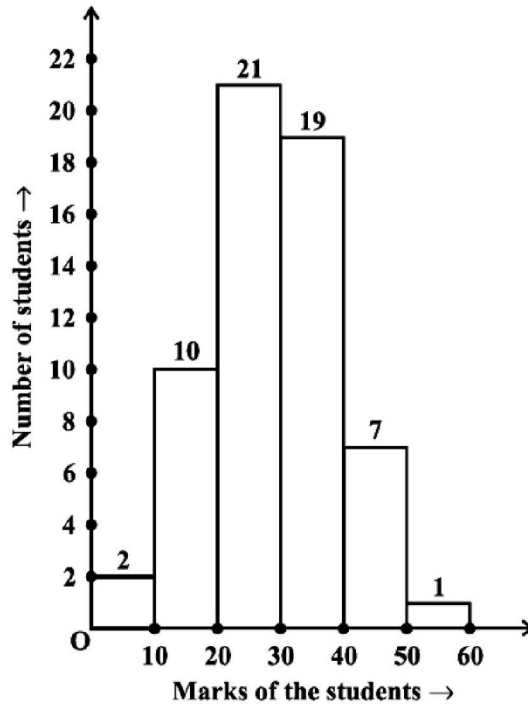
16. Solve: 
$$\frac{2x - (7 - 5x)}{9x - (3 + 4x)} = \frac{7}{6}$$

17. Find the smallest number by which 704 must be divided to obtain a perfect cube.

18. In a parallelogram RUNS, (see below Figure), find the values of x and y.



19. Observe the histogram (see below Figure) and answer the questions given below. (i) What information is being given by the histogram?  
(ii) Which group contains maximum students and minimum students?  
(iii) How many students have score 20 marks and more?



20. A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.
21. Find the smallest square number that is divisible by each of the numbers 8, 15 and 20.
22. Solve:  $4(3p + 2) - 5(6p - 1) = 2(p - 8) - 6(7p - 4)$

### SECTION - D

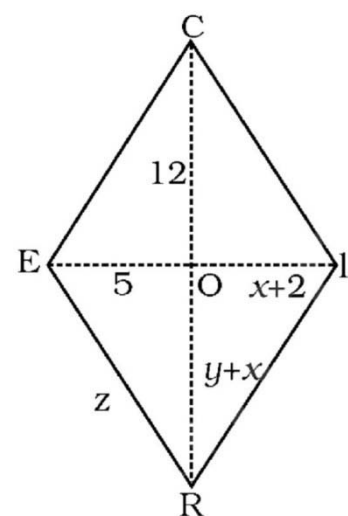
23. One of the two digits of a two digit number is three times the other digit. If you interchange the digits of this two-digit number and add the resulting number to the original number, you get 88. What is the original number?

24. Find the square root of the following by long division method.  
(a) 1369 (b) 5625

25. Three numbers are in the ratio 2:3:4. The sum of their cubes is 0.334125. Find the numbers.

26. On a graph paper plot the following points.  
(i) A (4, 3)      (ii) B (-3, -5)      (iii) C (-2, 5)

27. In the given figure, RICE is a rhombus. Find  $x$ ,  $y$ ,  $z$ . Hence, find the perimeter of the rhombus.



28. Divide:- (i)  $(6x^2 - 31x + 47)$  by  $(2x - 5)$   
(ii)  $(2x^3 - 5x^2 + 8x - 5)$  by  $(2x^2 - 3x + 5)$

29. Shalini has to cut out circles of diameter  $1\frac{1}{4}$  cm from an aluminium strip of dimensions  $8\frac{3}{4}$  cm by  $1\frac{1}{4}$  cm. How many full circles can Shalini cut? Also calculate the wastage of the aluminium strip.

30. On a particular day, the sales (in rupees) of different items of a baker's shop are given below.

Ordinary bread	320
Fruit bread	80
Cakes and pastries	160
Biscuits	120
Others	40
<b>Total</b>	<b>720</b>

Draw a pie chart for this data.

