Std. 8 Time : 3 hrs.

19-9-2016 Summative Assessment I in **MATHEMATICS** M. Marks : 90

General Instructions:

i) All questions are compulsory.

ii) The question paper consists of 31 questions divided into four sections A, B, C & D. Section – A comprises of 4 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 & Section – D comprises of 11 questions of 4 marks each.

Section – A [1x4 = 4 marks]

1. Express 4^{-3} as a power with base 2.

2. How many non-square numbers lie between 7^2 & 8^2?

3. Name the properties used in

i) $\frac{7}{5} + \frac{4}{3} = \frac{4}{3} + \frac{7}{5}$ ii) $\frac{4}{3} \times (\frac{8}{5} \times \frac{7}{9}) = (\frac{4}{3} \times \frac{8}{5}) \times \frac{7}{9}$.

4. Using prime factorization method, check whether 243 is a perfect cube or not.

Section – B [2x6 = 12 marks]

5. Write a Pythagorean triplet whose smallest no. is 14.

6. Verify that –(–x) = x for $x = -\frac{21}{47}$

7. Find the no. of sides of a regular polygon whose each exterior angle has a measure of 45^0.

8. Find 'm' so that $(-3)^{m+1} \times (-3)^5 = (-3)^7$.

9. Solve: $2y + \frac{5}{3} = \frac{26}{3} - y$.

10. Find the smallest no. by which 108 must be multiplied so that the product is a perfect cube.

Section – C [3x10 = 30 marks]

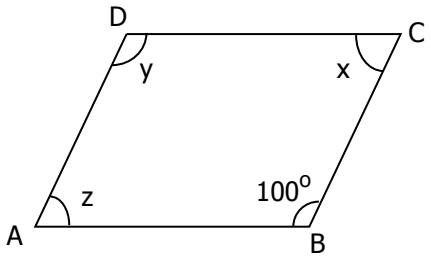
11. Find three rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$.

12. Evaluate : i) $\sqrt[3]{216 \times (-343)}$ ii) $\sqrt[3]{\frac{512}{-2744}}$

13. The base of an isosceles triangle is $\frac{4}{3}$ cm. The perimeter of the triangle is $4\frac{2}{15}$ cm. What is the length of either of the remaining equal sides?

14. Name the quadrilaterals whose diagonals
    i) bisect each other ii) are perpendicular bisectors of each other
    iii) are equal

15. In parallelogram ABCD, find the vales of x, y and z.



16. Construct a rectangle PQRS in which PQ = 4cm & QR = 6cm.

17. Find the least number which must be added to 1750 to get a perfect square. Also find the Square root of the perfect square so obtained.

18. Evaluate : i) $(8^{2/3})^{-3/2}$ ii) $3 \times 5^{3/2} \times 5^{-1/2}$

19. A positive number is 5 times another number. If 21 is added to both the numbers, then one of the new numbers becomes twice the other new number. What are the numbers?

20. Construct a rhombus ABCD in which AB = 4.5cm and BD = 6cm.

Section – D[4x11 = 44 marks]

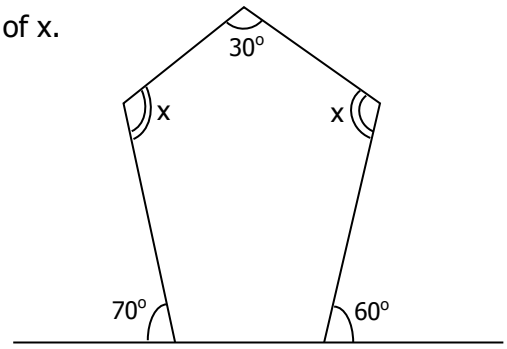
21. Solve : i) $\frac{x+2}{3} - \frac{2-x}{4} = \frac{x+2}{2}$. ii) $2(x+1) - 3(x-5) = 13$.

22. The sum of the digits of a two digit number is 12. The number obtained by interchanging the digits exceeds the original number by 18. Find the number.

23. Simplify $\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$

24. Find the greatest six digit number which is a perfect square.

25. Find the measure of x.



26. Deveshi has a total of Rs. 590 as currency notes in the denominations of Rs. 50, Rs. 20 and Rs. 10. The ratio of the number of Rs. 50 notes and Rs. 20 notes is 3:5. If she has a total of 25 notes, how many notes of each denomination does she have?

27. Represent $\frac{-3}{7}, \frac{-1}{7}, \frac{4}{7}, \frac{6}{7}$ on a number line.

28. Is 1188, a perfect cube? If not, by which smallest natural number should 1188 be divided so that the quotient is a perfect cube?

29. Simplify : i) $(-2)^2 \div (-2)^4$ ii) $(5^{-1} \times 3^{-1})^{-1} \div 6^{-1}$

30. There are 2401 students in a school. PT teacher wants them to stand in rows and columns such that the number of rows is equal to the number of columns. Find the number of rows. [Use long division method].

31. Construct the quadrilateral ABCD in which AB = 4cm, BC = 6.5cm, $\angle A = 90^0$, $\angle C = 75^0$ and $\angle D = 105^0$.