

Class 8

Time : 3 hrs.

11-9-2015

Summative Assessment I in MATHEMATICS

M. Marks : 90

General Instruction:

This question paper consists of 34 questions divided into four sections A, B, C and D. Section A comprises of 8 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 10 questions of 4 marks each.

SECTION – A (1 x 8 = 8 marks)

1. Evaluate $\left(\frac{5}{4}\right)^{-3}$.
2. How many natural numbers lie between the squares of 28 and 29?
3. Find the value of x in the equation: $\frac{2x}{3} = \frac{1}{15}$.
4. Evaluate 197^2 without actual multiplication.
5. Write the names of any two regular polygons.
6. Write additive inverse and multiplicative inverse of $\left(-\frac{9}{13}\right)$.
7. Check whether 3375 is a perfect cube or not?
8. Write angle sum property of a quadrilateral.

SECTION – B (2 x 6 = 12 marks)

9. Multiply $\frac{5}{12}$ with the reciprocal of $\left(-4\frac{1}{6}\right)$.
10. Name the property used in the following for the rational numbers.
 - a) $\left(-\frac{9}{5}\right) \times \frac{3}{4} = \frac{3}{4} \times \left(-\frac{9}{5}\right)$
 - b) $\frac{2}{7} \times 1 = \frac{2}{7}$.
11. Find the value of x : $\left(\frac{2x+1}{3x+5}\right) = 0$.

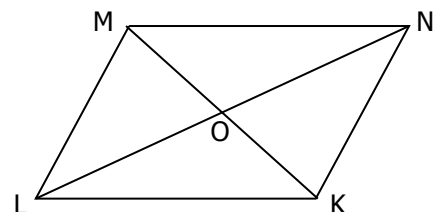
12. Find the measure of each interior angle of a regular hexagon.
13. Multiply the cube of 5 with the cube root of 4096.
14. Write a Pythagorean triplet whose one of the members is 12.

SECTION – C (3 x 10 = 30 marks)

15. Write name/s of the polygon that satisfy the following conditions:
- a) A quadrilateral whose diagonals intersect at right angles but don't bisect each other.
 - b) Both the diagonals of a quadrilateral are equal in length.
 - c) At least one pair of opposite sides of a parallelogram is parallel.
16. Draw a number line to represent the following rational numbers on it:
- a) $\frac{2}{3}$
 - b) $-\frac{5}{3}$
 - c) -1
17. Ram's mother is four times as old as Ram. After 5 years, his mother will be 3 times as old as he will be then. Find their present ages.
18. Simplify using appropriate property : $\frac{3}{5} \times \left(-\frac{7}{3}\right) + \frac{7}{3} - \frac{5}{2} \times \frac{7}{3}$.
19. Simplify : $\frac{15^2 \times a^{-3} \times 8}{6^3 \times 3^{-1} \times a^{-6}}$.
20. Find the least square number that must be divisible by each of 5, 6 and 8.
21. Find the smallest number by which 8788 must be divided so that the quotient is a perfect cube.
Also find the cube root of the new number.
22. Find the value of x : $\left(-\frac{2}{5}\right)^{-8} \times \left(-\frac{2}{5}\right)^{3x} = \left(-\frac{5}{2}\right)^{-7}$
23. Find the value of x :
- a) $2(x + 3) - 3x = 8 - 2(2x - 5)$
 - b) $2\left(x + \frac{3}{2}\right) = 9$
24. Construct a quadrilateral ABCD in which AB = 3.8cm, BC = 4.5cm, CD = 4cm, AD = 5cm and AC = 6.5cm.

SECTION – D (4 x 10 = 40 marks)

25. In the given figure KLMN is a parallelogram.
Find the value of x and y. If

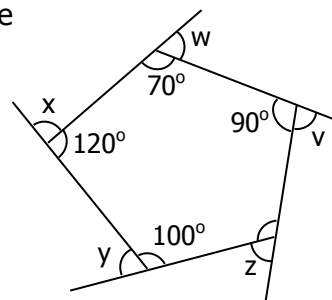


$$OM = \frac{5y}{6}, OK = 10, OL = 3(2x+y),$$

$$ON = 42.$$

26. Simplify for x and hence verify your answer

$$\frac{5(x+6) - 15(-x+2)}{3x-1} = 10.$$
27. Construct a quadrilateral PQRS in which QR = 6cm, PQ = 5cm, SR = 6.5cm, $\angle Q = 120^\circ$ and $\angle R = 75^\circ$.
28. Find the smallest 4 digit number which is a perfect square. Also write the square root of this number.
29. The angles of a triangle are given by $2x$, $3x - 30^\circ$ and $4x - 60^\circ$. Find the measure of all the angles of this triangle. What kind of triangle is it?
30. a) Verify associative property of multiplication for the rational numbers by taking $x = \frac{1}{2}$, $y = \frac{3}{5}$ and $z = \frac{10}{9}$.
 b) Write 4 rational numbers between $\frac{1}{4}$ and $\frac{1}{5}$.
31. The denominator of a fraction is 14 more than its numerator. If numerator and denominator both are increased by 5, the new fraction becomes $\frac{11}{8}$. Find the original fraction.
32. Find all the unknown angles in the figure and hence find $v + w + x + y + z$



33. Construct a rhombus whose length of diagonals measure 6.8cm and 8cm. Also write steps of construction.
34. Simplify: a) $\left\{ \left(\frac{1}{3} \right)^{-2} - \left(\frac{1}{2} \right)^{-3} \right\} \div \left(\frac{1}{4} \right)^{-2}$
 b) $\left(\frac{6}{11} \right)^{-3} \times \left(\frac{11}{6} \right)^{-2}$

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