

Instructions :

1. Section A contains ten questions of two marks each.
2. Section B contains ten questions of three marks each.
3. Section C contains 2 questions of 5 marks each.

SECTION-A

1. Subtract the sum $\frac{1}{2}$ and $\frac{1}{4}$ from the sum of 1 and $\frac{1}{3}$

2. Find the value of $\frac{x}{y}$ if

$$\left(\frac{3}{5}\right)^4 \times \left(\frac{15}{10}\right)^4 = \left(\frac{x}{y}\right)^4$$

3. If one of the Pythagorean triplet is 14 find the remaining two.

4. Find cube root of given numbers $-\frac{0.008}{0.000216}$

5. When $a = 3$, $b = 2$ then Evaluate $(a - b)(2a^2 - 3ab + b^2)$

6. Using identity find the value of 998^2

7. Factorise $15 + x^2y + 5y + 3x^2$

8. Find the measure of each exterior and each interior angle of regular polygon with sides 9.

9. Factorise :- $x^2 - 8x + 12$

10. Calculate the area of trapezium if the distance between its parallel sides is 19 cm and the two parallel sides measures 27 cm and 23 cm.

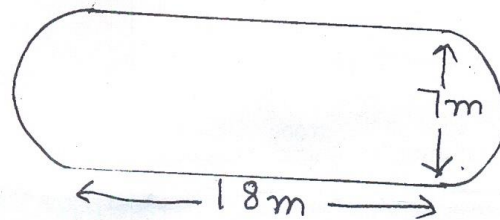
SECTION-B

11. If $A = \frac{5}{7}$ and $B = \frac{7}{9}$ and $C = \frac{3}{2}$ verify $A \times (B + C) = A \times B + A \times C$ also name this property.

12. Simplify : $\frac{8^{-1} \times 5^3 \times 27}{2^{-4} \times 625 \times 3^{-4}}$

13. Find the smallest perfect square which is divisible by each of the numbers 12, 16 and 20.

14. Find cube root of given number using prime factorization $166\frac{2}{8}$.
15. Find the greatest 4-digit number, which is a perfect square, Also find its square root.
16. Compute p if $5p = 75^2 - 30^2$
17. If $x - \frac{1}{x} = 5$ find the value of $x^2 + \frac{1}{x^2}$ and $x^4 + \frac{1}{x^4}$
18. Divide $2x^4 - 4x^3 + x^2 + 4x - 3$ by $x^2 - 1$ Write quotient and remainder.
19. In parallelogram $ABCD$, $\angle C = 5x - 20$ and $\angle A = 3x + 10$. Find the value of x then calculate all the angles.
20. The shape of a field is rectangular in the middle and semi circular at the two ends. Find the area of this field.



- SECTION-C
21. Find the area of the field
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- A diagram for question 21 showing a field with vertices D, C, B, E. A vertical line segment DF is 50m, FC is 50m, and a horizontal line segment EG is 60m. A point H is on EG such that EH = 15m and HB = 25m. A vertical line segment DH is 40m and a horizontal line segment HB is 25m. A semi-circular arc connects E and B with a radius of 25m.
22. In a rectangle ABCD the diagonals AC and BD meet O. If $AC = 7x - 1$ and $BD = 6x + 1$
 (i) Find x (ii) Find the length AB if BC = 5 cm (iii) Also find its area.
