JASWANT MODERN SR. SEC.SCHOOL SUMMER HOLIDAY WORKSHEET 2025-26 MATHS CLASS 9

1. Find three irrational numbers between $\frac{5}{7}$ and $\frac{9}{11}$.
2. $\frac{3+\sqrt{7}}{3-\sqrt{7}} = a + b\sqrt{7}$. Find a and b
3. Find five rational numbers between 3/5 and 4/5 .
4. Express: 0.4777…… and 0.6666…… in the form $\frac{p}{q}$.
5. Show that $\frac{3}{13}$, $\frac{1}{5}$, $\frac{2}{11}$ and $\frac{1}{3}$ in the decimal expansion.
6. Find three different irrational between $\frac{1}{7}$ and $\frac{2}{7}$.
7. Find five rational numbers between 1 and 2.
8. Rationalise the denominator of $\frac{2}{\sqrt{7}-\sqrt{6}}$
9. Classify the following numbers as rational or irrational :
   (a) 7.478478….. (b) 0.3796 (c) 0.34512…….
10. Express: 0.001001…… and 0.333…… in the form $\frac{p}{q}$.
11. Evaluate 95×96 without multiplying directly.
12. Write $(3a + 4b + 5c)^2$ in expanded form.
13. Evaluate : $(999)^3$
14. Factorise : (i) $9x^2 + 6xy + y^2$ (ii) $64\ a^3 – 27b^3 - 144a^2b + 108\ ab^2$.
15. Factorise : $x^3 - 3x^2 - 9x – 5$, $6x^2 - 13x + 2$ and $x^2 - x – 2$.
16. Factorise : $x^2 – 22x + 120$ and $6x^2 + 17x + 5$
17. Factorise : $x^2 – 2$, $4x^2 + 16x$ and $x^2 – 4$
18. Factorise each of the following: (i) $27y^3 + 125z^3$ (ii) $9x^3 – 25y^3$
19. Expand : $(3a – 7b - c)^2$ and $(2a + 5b - 7c)^2$
20. Evaluate : $(998)^3$ and $(95)^2$
21. Give two example of a binomial of degree 24 .
22. Write the name of the point where these two lines intersect.
23. What is the name of each part of the plane formed by these two lines ?
24. In which quadrant or on which axis do each of the points (1,2) , (-3,6) ,(-5,-4) and (3,-3)
25. In which quadrant do each of the following points lies : (3,2) , (-2 ,-4) , (-1, 2) , (4 , -2) .
26. Find the value of k, if x -1 is a factor of $kx^2 - 3x + k$.
27. Find two different solutions of the equation $x + 2y = 6$.
28. Draw the graph of linear equation $3x + y = 7$. And $x + y = 5$.
29. Find the value of k, if x +2 is a factor of $kx^2 - 2x + 1$.
30. Find four different solutions of the equation $3x + y = 8$.
31. Find the area of a triangle whose sides are 8cm , 11cm and 13cm.
32. Find the area of triangle, two sides of which are 13 cm and 8 cm and perimeter is 32 cm.
33. Sides of a triangle are in the ratio of 3: 5: 7 and its perimeter is 300 m. Find its area.
34. An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm . Find the area .
35. Sides of a triangle are in the ratio of 12:17:25 and its perimeter is 540 cm. Find its area.
36. A field is in the shape of trapezium whose parallel sides are 25 m and 10 m.The non-parallel sides are 14 m and 13 m . Find the area of the field .
37. A traffic signal board, indicating ‘SCHOOLAHEAD’ is an equilateral triangle with side 'a'. Find the area of the signal board, using Heron’s formula. If its perimeter is 180 cm, what will be the area of the signal board?
38. Find six rational numbers between 3 and 4.
39. Find the value of polynomial: $p(x) = 3x – 4x^2 + 3$ at $x = 2$
40. Evaluate 101×104 without multiplying directly.
41. Simplify : $2^{2/3} . 2^{1/5}$ and $64^{1/2}$