

Work Sheet Mathematics

1. Write down the square of : $8m - \frac{1}{2}$
2. If $x + \frac{1}{x} = 12$, find the value of: $\left[x + \frac{1}{x}\right]^2$
3. Find the product : $(x+3)(x-3)(x^2 + 9)$
4. Using the identity for difference of two squares, find the product of 51×49
5. Find the value of x, if : $13x = (58)^2 - (45)^2$
6. Find the product, using identity: $(100 + 3)(100 + 2)$
7. Multiply $(4x^2 + 3y)$ by $(3x^2 - 4y)$ and verify the result for $x = 1, y = 2$
8. If $x + y = 9$ and $xy = 16$, find the value of $(x^2 + y^2)$.
9. Evaluate : $\frac{4.359 \times 4.359 - 1.641 \times 1.641}{4.359 - 1.641}$
10. A person sells an article for Rs 550, gaining one-tenth of its C.P. Find gain percent.
11. A toy was sold at a gain of 12%. Had it been sold for Rs 33 more, there would have been 14% gain. Find the cost price of the toy
12. After allowing a discount of 12% on the marked price of an article, it is sold for Rs 880. Find its marked price.
13. List price of a pair of shoes is Rs 450. If Amit paid Rs 45 as VAT for it, find the rate of VAT.
14. A music system is available for Rs 13750 including VAT. If the rate of VAT is 10%, find the original cost of the system.
15. Simple interest on a sum of money for 3 years is at $6\frac{1}{4}\%$ per annum is Rs 2400. What will be the compound interest on that sum at the rate for the same period?
16. The population of a town 2 years ago was 62500. Due to migration to cities, it decreases every year at the rate of 4% per annum. Find its present population.
17. The present population of a city is 9261000. If it has been increasing at the rate of 5% per annum, find its population x years ago.
18. In a factory production of scooters rose to 48400 from 40000 in 2 years. Find the rate of growth per annum.
19. The value of a flat worth Rs 5000000 is depreciating at the rate of 10% per annum. In how many years will its value be reduced to Rs 3645000?
20. Construct a histogram for the following data:

Monthly school fee (in Rs) :	30-60	60-90	90-120	120-150	150-180	180-210	210-240
No of schools:	5	12	14	18	10	9	4
21. Draw a pie chart for the following data:
 Subject: English, Computer, Science, Mathematics
 Marks: 35, 40, 45, 60
22. A bag holds 26 tiles, each marked with a different letter. What is the probability that one tile chosen at random is not vowel?
23. The area of a trapezium is 1586cm^2 and the distance between parallel sides is 26cm. If one of the parallel sides is 38cm, find the other.
24. If the perimeter of a trapezium is 52cm, its non parallel sides are equal to 10cm each and its altitude is 8cm, find the area of the trapezium.
25. How many 5cm cubes can be cut off from a cube whose edge is 20cm?
26. 3 cubes of sides 3cm, 4cm and 5cm are melted and a new cube is formed. Find the side of the new cube.
27. A swimming pool is 250m long and 130m wide. 3250 cubic metres of water is pumped into it. Find the depth of the water.
28. Find the surface area of a chalk box whose length, breadth and height are 16cm, 8cm and 6cm respectively.

Work Sheet Mathematics

29. A cube of 9cm edge is immersed completely in a rectangular vessel containing water. If the dimensions of the base are 15cm and 12cm, find the rise in water level in the vessel.
30. 2 cubes each of 10cm edge are joined end to end. Find the surface area of the resulting cuboid.
31. Find the height of the cylinder whose radius is 7cm and the total surface area is 968cm^2 .
32. In a temple there are 25 cylindrical pillars. The radius of each pillar is 28cm and 4m. Find the total cost of painting the curved surface area of the pillars at the rate of Rs. 8 per metre square.
33. The lateral surface area of a hollow cylinder is 4224m^2 . It is cut along its height and formed a rectangular sheet of width 32cm. Find the perimeter of the rectangular sheet.
34. A rectangular sheet of paper 14cm x 18cm is rolled along its length and a cylinder is formed. Find the volume of the cylinder.
35. The volume of a cylinder is $448\pi\text{cm}^3$ and height 7cm. Find its lateral surface area and total surface area.
36. The trunk of a tree is cylindrical and its circumference is 176cm. If the length of the trunk is 3m, find the volume of the timber that can be obtained from the tank.
37. Factorise:
 - (i) $(2x + 3y)^2 - 5(2x + 3y) - 14$
 - (ii) $3m^2 + 24m + 36$
 - (iii) $x^2 + 14x + 45$
 - (iv) $1 - 2ab - (a^2 + b^2)$
 - (v) $16 - x^2 - 2xy - y^2$
 - (vi) $x^4 - (x - z)^4$
 - (vii) $4x^2 - 12xy + 9y^2$