**JASWANT MODERN SR.SEC.SCHOOL SUMMER HOLIDAY WORKSHEET**
**MATHS 2026-27 CLASS 8 SET: A**

**1.** Find the smallest number by which 1323 must be multiplied so that the product is a perfect cube.

**2.** A tank is in the shape of a cube. If it holds 19683 litres of water, find the length of each side. (1000 litres = 1 $m^3$)

**3.** What is the smallest number by which 1600 must be divided so that the quotient is a perfect cube?

**4.** Find the smallest number by which 8788 must be divided so that the quotient is a perfect cube.

**7.** Which of the following numbers are perfect cubes? Find the number whose cube is the given number: (i) 125 (ii) 243

**8.** Which of the following are the cubes of even numbers? (i) 216 (ii) 729 (iii) 512 (iv) 1000

**9.** The area of a square field is 5625 $m^2$. Find the cost of fencing it at ₹18 per metre. **10.** Find the smallest number by which 252 must be multiplied to get a perfect square. Also find the square root of the perfect square so obtained. (Hint: 252 = 2×2×3×3×7) **11.** Which one among $(64)^2$, $(108)^2$, $(292)^2$, $(36)^2$ has last digit 4?

**12.** Find the smallest number by which 2925 must be divided to obtain a perfect square. Also find the square root of the perfect square so obtained. (Hint: 2925 = 5×5×3×3×13) **13.** 1225 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

**14.** The students of a class arranged a picnic. Each student contributed as many rupees as the number of students in the class. If the total contribution is ₹1156, find the strength of the class. **15.** Find the least square number which is exactly divisible by each of the numbers 6, 9, 15 and 20. **16.** The national debt of a country is ₹$9.4\times10^{12}$ . Write this in usual form.

**17.** Mass of earth is ($5.97\times10^{24}$) kg and mass of moon is ($7.35\times10^{22}$) kg. What is the total mass of the two?

**18.** There are about 100 million bee colonies in the world. Find the number of honeybees if each colony has about 50000 bees.

**19.** There are an estimated 50 lakh American alligators in the world. If the global human population is about $8\times10^9$, then how many people are there for every American alligator. **20.** The human body has about 38 trillion bacterial cells. If the global human population is 8.2 billion, then find the bacterial population residing in all humans in the world. (Hint: 1 trillion = $10^{12}$ and 1 billion = $10^9$) **21.** Evaluate: $[6^{-1} + (3/2)^{-1}]^{-1}$ **22.** Write 0.00000083 in standard form.

**23.** Evaluate: $(6^{-1} - 8^{-1})^{-1} + (2^{-1} - 3^{-1})^{-1}$ **24.** A number in expanded form is: $7\times10^4 + 0\times10^3 + 5\times10^2 + 9\times10^1 + 3\times10^0 + 8\times10^{-1} + 0\times10^{-2} + 4\times10^{-3}$. Write the numeral. **25.** The distance from Earth to the Sun is approximately $1.496\times10^8$ km. Express this in usual form. **26.** The distance from Earth to the Sun is approximately $1.496\times10^8$ km. Express this in usual form. **27.** The product of two numbers is 2,74,68,000. If one number is expressed as $2.7468\times10^7$ in standard form, find the other number and also write it in standard form.

**28.** Is 72 a perfect cube? If not, find the smallest number to be added to make it a perfect cube.

**29.** Write XXVII, XXXIV, XCI, CCXXIV and DVI as Hindu-Arabic numerals. **30.** Write $5.673\times10^{-4}$ in usual form.

**31.** Simplify and express with positive exponents: $(2^3 \times 3^{-2}) \div (2^{-1} \times 3^2)$ **32.** If $(5/3)^x \times (5/3)^{-4} = (5/3)^5$, find x.

**33.** Express the thickness of a human hair = 0.005 cm in standard form.

**34.** Express the thickness of a piece of paper = 0.0016 cm in standard form.

**35.** Express 1 micron = 1/1000000 m in standard form.

**36.** Write 684502 in expanded form. **37.** Express the diameter of a wire on a computer chip = 0.000003 m in standard form.

**38.** The mass of a proton is $1.67\times10^{-27}$ kg and the mass of an electron is $9.11\times10^{-31}$ kg. How many times heavier is a proton than an electron? **39.** A number when expressed in standard form is $4.05\times10^5$. Another number in standard form is $2.7\times10^3$. Find their product and quotient, both in standard form.

**40.** The population of a city doubles every 20 years. If current population is $6.4\times10^5$, what will it be after 60 years? Express in standard form.

**JASWANT MODERN SR.SEC.SCHOOL SUMMER HOLIDAY WORKSHEET**
**MATHS 2026-27 CLASS 8 SET: B**

1. A sculptor wants to arrange 4394 identical marble cubes into one large cube without any cubes left over. What is the minimum number of cubes he must add? 2. Evaluate: $[8^{-1} + (4/5)^{-1}]^{-1}$
3. A dice-shaped storage box can hold 64 $m^3$ of sand. Find the length of one side of the box.
4. A farmer has 4374 mangoes. He wants to pack them into identical cubical stacks. Find the smallest number of mangoes that must be removed. 5. Find the least perfect square divisible by 10, 12, 15 and 18.
6. A warehouse stores 9604 cartons. What least number of cartons should be removed so the remaining cartons can be arranged into a perfect cube?
7. Check whether the following numbers can represent the volume of a cube: (i) 729 (ii) 200
8. Which of these numbers are cubes of odd numbers? (i) 343 (ii) 512 (iii) 2197 (iv) 4096
9. A square park covers 4900 $m^2$. Street lights are to be installed all around its boundary at a cost of ₹35 per metre. Find the total expense. 10. Evaluate: $(9^{-1} - 18^{-1})^{-1} + (5^{-1} - 15^{-1})^{-1}$
11. Convert 0.000000071 into scientific notation. 12. If $(9/5)^x \times (9/5)^{-3} = (9/5)^4$, determine x.
13. A number has prime factors 2×3×3×5. What least number should multiply it so the result becomes a perfect square?
14. Which one among $(27)^2$, $(49)^2$, $(81)^2$ and $(93)^2$ ends with digit 9?
15. A carpenter has 2450 wooden blocks. He wants to arrange them into a square formation with none left over. What is the minimum number of blocks he should remove?
16. Chairs are arranged in a hall such that the number of rows equals the number of chairs in each row. If there are 1849 chairs altogether, find the number of rows.
17. In a sports club, each member contributes an amount equal to the total number of members. If ₹1681 is collected, determine the number of members.
18. A company recorded an annual turnover of $₹3.08\times10^{12}$. Write this figure in ordinary notation.
19. The mass of Saturn is $5.68\times10^{26}$ kg and the mass of Uranus is $8.68\times10^{25}$ kg. Find difference of masses.
20. A wildlife survey reports 60 million bird nests, each having nearly 1200 birds over a season. Estimate the total bird population. 21. Expand the number 506209 according to place values.
22. There are about 40 lakh snow leopards in a fictional reserve system. If the human population nearby is $6\times10^9$, find how many humans correspond to one snow leopard.
23. Every computer contains nearly $2\times10^9$ transistors. If a factory manufactures $5\times10^6$ computers, estimate the total number of transistors used. 24. The diameter of a planet is nearly $1.27\times10^4$ km. Express it in ordinary form.
25. A scientist measured a bacteria strand to be $3.45\times10^{-6}$ m long. Write it in decimal form.
26. The product of two numbers is 8,19,00,000. One factor is $8.19\times10^5$. Find the other factor and express it in standard form. 27. The following Roman numerals in Hindu-Arabic form: LIV, XCIX, CLX, CDV and DCCL
28. Is 1458 a perfect cube? If not, determine the least number that must be subtracted to make it one.
29. Write $7.004\times10^{-6}$ in decimal notation. 30. Simplify and write with positive powers only: $(5^3 \times 2^{-2}) \div (5^{-1} \times 2^3)$
31. The thickness of a metal foil is 0.00009 m. Express it in scientific notation.
32. The diameter of a tiny fibre thread is 0.00000042 m. Express it in standard form.
33. Express one picometre = 1/1000000000000 m in scientific notation.
34. A laser beam has a width of 0.000000003 m. Express this in scientific notation.
35. The mass of a hydrogen atom is $1.67\times10^{-27}$ kg while the mass of a dust particle is $5\times10^{-18}$ kg. How many times heavier is the dust particle?
36. Two numbers are written as $7.5\times10^6$ and $2.5\times10^2$. Find: (i) their product (ii) their quotient.
37. A digital file doubles in size every hour. If its present size is $3.2\times10^3$ MB, what will be its size after 5 hours? Express the answer in standard form.
38. A cube-shaped aquarium occupies a volume of 343000 $cm^3$. Find the length of one edge.
39. What least number should be multiplied with 432 so that the product becomes a perfect square? Also find the square root of the obtained square number.
40. A social media page gains triple followers every month. If it currently has $2.7\times10^4$ followers, how many followers will it have after 3 months? Express the answer in standard form.