

- Add: (i) $\frac{5}{16} + \frac{7}{24}$ (ii) $\frac{8}{17} + 5$
- Rearrange suitably and find the sum in each of the following.
 - $\frac{7}{5} + \frac{2}{3} + \frac{8}{5} + \frac{12}{15} + \frac{-6}{5}$
 - $\frac{7}{12} + \frac{3}{8} + \frac{1}{7} + \frac{1}{12} + \frac{8}{7} + \frac{-3}{16}$
- The sum of two numbers is -7 . If one of them is $\frac{-15}{6}$, find the other.
- Express each of the following as power of a rational number of the form $\frac{p}{q}$ ($q \neq 0$) with positive exponents.
 - $\left(\frac{1}{15}\right)^{-4}$
 - $5^{-2} \times 5^{-3}$
 - $\left(\frac{-1}{3}\right)^{-4} \times \left(\frac{-1}{3}\right)^{-3}$
- Simplify using the laws of exponents and express each of the following in exponential form with positive exponents.
 - $(-6)^3 \times (-6)^5$
 - $5^{-4} \times 4^{-5}$
 - $(3^{-1} \div 5^{-1})^2 \times \left(\frac{5}{9}\right)^{-1}$
 - $(6^{-5} \div 6^{-10}) \times 7^{-7}$
- Simplify:
 - $(7^{-1} \div 5^{-1}) \times \left(\frac{-7}{5}\right)^{-1}$
 - $\left[\left(\frac{27}{13}\right)^{-1} + \left(\frac{81}{11}\right)^{-1}\right] \div \left(\frac{5}{9}\right)^2$
 - $\left(\frac{6}{7}\right)^2 \times \left(\frac{6}{7}\right)^{-3} \times \left(\frac{6}{7}\right)^6$
- Write the following numbers using scientific notation.
 - 365429
 - 518.6394
 - 0.0003251
- Expand each of the following.
 - 5.18×10^{-2}
 - 4.6195×10^4
 - 7.005×10^{-5}
- Find the square of the following.
 - 307
 - 37
 - $\frac{17}{14}$
 - 8.19
- The student of class VIII of a school donated ₹ 1521 for Prime Minister's National Relief Fund. Each student donated as many rupees as the number of students in the class. Find the number of students in the class.
- By which least number should we multiply 16848, so that it becomes a perfect square.
- Find the square root of 175.721536.
- Find the square root of 0.9 up to three places of decimal.
- Find the cube of each of the following.
 - 17
 - 0.38
 - $\frac{13}{16}$
 - 0.013
 - $\frac{-14}{17}$
- Find the cube roots of the following.
 - 941192
 - 134217728
 - 48228544
 - 1236391
 - 328509

16. Evaluate: (i) $216\sqrt[3]{b^6} - \sqrt[3]{216b^6}$ (ii) $\sqrt[3]{-64 \times -2744}$
17. Show that: $\sqrt[3]{\frac{3375}{4917}} = \frac{\sqrt[3]{3375}}{\sqrt[3]{4917}}$
18. Which of the following numbers are divisible by 5?
 (i) 38 (ii) 65 (iii) 240 (iv) 654 (v) 1025
19. Which of the following numbers are divisible by 9?
 (i) 91 (ii) 306 (iii) 1526 (iv) 730143 (v) 568711
20. If $24x$ is a multiple of 3, where x is a digit, what is the value of x ?
21. If $P = \{x : x \text{ is a letter of the word "EVALUATION"}\}$
 and $Q = \{x : x \text{ is a letter of the word "EDUCATION"}\}$, then find:
 (i) $(P \cup Q)$ (ii) $(P \cap Q)$ (iii) $n(P), n(Q), n(P \cup Q), n(P \cap Q)$
22. Take away $\frac{5}{3} + \frac{x}{3} + \frac{6}{3}x^2 + \frac{5}{3}x^3$ from $\frac{5}{2} - \frac{x}{2} + \frac{7}{2}x^2 + \frac{5}{2}x^3$.
23. Multiply: (i) $-3ab^2c, -5abc$ and -6 (ii) $5, 12b$ and $-66abc$
24. Express the following products as monomials.
 (i) $20x^{10}y^{15}z^{20} \times (15x^2y^2z^2)^2$ (ii) $51x^{13}a^3b^3 \times (5x^3a^5b^2)^3$
25. Write down the product of $-6x^2y^6$ and $-30xy$. Also, verify the product for $x = 2, y = 1$.
26. Find the product of the following.
 (i) $\left(\frac{9}{6}x + \frac{7}{3}y\right)\left(\frac{9}{6}x - \frac{7}{3}y\right)$ (ii) $\left(2a + \frac{7}{5}\right)\left(2a - \frac{7}{5}\right)$ (iii) $(5x^2 - 7y^2)(5x^2 + 7y^2)$
27. Evaluate each of the following by using the identities.
 (i) $(105)^2$ (ii) $205 \times 205 - 175 \times 175$ (iii) $0.62 \times 0.62 - 0.38 \times 0.38$
28. Find the quotient and remainder, when $x^5 + 3x^4 - 5x^3 + 14x^2 - 39x - 11$ is divided by $x^2 + 4x - 2$.
29. Factorise:
 (i) $x^2 + xz + 5x + 5z$ (ii) $49x^2 - 70xy + 25y^2$ (iii) $36x^2 - \frac{25}{4}y^2$ (iv) $81x^2y - \frac{y}{81x^2}$
30. Factorise:
 (i) $9a^4 - 24a^2b^2 + 16b^4 - 256$ (ii) $9 - x^6 + 2x^3y^3 - y^6$ (iii) $x^2 - 11x - 80$
31. A certain school has 400 students, 160 of whom are boys. It has 20 teachers, 12 of whom are men. What percentage of the total number of the teachers in the school is female?
32. After allowing a discount of 7.5% on the marked price, an article is sold for ₹ 888. Find the marked price.
33. Mahi purchased a pair of shoes for ₹ 483 including VAT. If the sales price of the shoes is ₹ 460, find the rate of VAT.
34. Find the amount for ₹ 1,05,000 for 2 years compounded annually, if the rate of interest is 10% for the first year and 12% for the second year.