

CLASS - 9

- Express in p/q (i) $0.\overline{5}$ (ii) $0.\overline{34}$ (iii) $0.\overline{47}$ (iv) $0.1\overline{34}$
(vi) $5.\overline{2}$ (vii) $0.\overline{001}$
- Find 3 irrational Number b/w (i) $\frac{1}{7}$ and $\frac{3}{13}$ (ii) $\frac{2}{7}$ and $\frac{4}{11}$
(iii) $\frac{5}{7}$ and $\frac{9}{11}$ (iv) $\frac{1}{9}$ and $\frac{2}{10}$
- Classify as rational and irrational No. (i) $\sqrt{23}$ (ii) $\sqrt{225}$
(iii) 0.3796 (iv) $7.478478\dots$ (v) $2-\sqrt{3}$ (vi) $\frac{1}{\sqrt{2}}$
(vii) $2+\sqrt{23}$ (viii) 2π
- Taking $\sqrt{2} = 1.414$ find the value of $\frac{5\sqrt{2}}{2}, \frac{3\sqrt{2}}{5}$
- If $x = \sqrt{7} + \sqrt{5}$ and $y = \sqrt{7} - \sqrt{5}$, evaluate (i) $x^2 + y^2$ (ii) $x^2 - y^2$
- Simplify (i) $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$ (ii) $\frac{\sqrt{24}}{8} + \frac{\sqrt{54}}{9}$
(iii) $\frac{3}{\sqrt{8}} + \frac{1}{\sqrt{2}}$ (iv) $4\sqrt{12} \times 7\sqrt{6}$ (v) $2\sqrt{27} + \frac{1}{\sqrt{3}} + 5\sqrt{3}$
(vi) $\frac{\sqrt{3}}{3} + \frac{\sqrt{3}}{6}$
- Simplify by rationalising the denominator:
(i) $\frac{2+\sqrt{3}}{2-\sqrt{3}}$ (ii) $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ (iii) $\frac{\sqrt{6}}{\sqrt{2}\sqrt{3}}$ (iv) $\frac{2\sqrt{6}+\sqrt{5}}{3\sqrt{5}-2\sqrt{6}}$
(v) $\frac{3\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$
- Simplify: (i) $(1^2 + 2^2 + 3^2)^{\frac{1}{2}}$ (ii) $\frac{(8)^{\frac{1}{3}} \times (16)^{\frac{1}{3}}}{(32)^{-\frac{1}{3}}}$
(iii) $\left(\frac{81}{16}\right)^{-\frac{3}{4}} \left[\left(\frac{25}{9}\right)^{-\frac{3}{2}} \div \left(\frac{5}{2}\right)^{-3} \right]$

9. Prove that $\left(x^{\frac{1}{a-b}}\right)^{\frac{1}{a-c}} \times \left(x^{\frac{1}{b-c}}\right)^{\frac{1}{b-a}} \times \left(x^{\frac{1}{c-a}}\right)^{\frac{1}{c-b}} = 1$

10. Prove that $\frac{(x^{a+b})^2 \times (x^{b+c})^2 \times (x^{c+a})^2}{(x^a \cdot x^b \cdot x^c)^4} = 1$



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