

1. Find the value of: $\left(\frac{81}{16}\right)^{-\frac{3}{4}} \times \left[\left(\frac{25}{9}\right)^{-\frac{3}{2}} \div \left(\frac{5}{2}\right)^{-3}\right]$
2. Find two irrational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.
3. If $x = 3 + 2\sqrt{2}$, find the value of $x^2 + \frac{1}{x^2}$
4. Rationalise the denominator of $\frac{1}{7-4\sqrt{3}}$ and find the value if $\sqrt{3} = 1.73$
5. Represent $\sqrt{5.4}$ geometrically.
6. Evaluate: $\frac{70}{\sqrt{10}+\sqrt{20}+\sqrt{40}-\sqrt{80}}$ if $\sqrt{10} = 3.16$ and $\sqrt{5} = 2.24$
7. Express $1.\overline{32} + 0.\overline{35}$ in the form $\frac{p}{q}$ where p and q are integers $q \neq 0$.
8. Simplify the following expression by rationalising the denominator:
$$\frac{3}{\sqrt{3}+\sqrt{2}} - \frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}} - \frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}} + \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}$$
9. Represent $0.\overline{237}$ in the form $\frac{p}{q}$ where p and q are integers, $q \neq 0$.
10. If $\left(\frac{3}{4}\right)^6 \times \left(\frac{16}{9}\right)^5 = \left(\frac{4}{3}\right)^{x+2}$, find the value of x .