

- Explain each of the following in $\frac{p}{q}$ form:
- (i) 0.675 (ii) $0.3\bar{2}$ (iii) $0.12\bar{3}$ (iv) $0.003\bar{52}$ (v) $4.\bar{32}$ (vi) $2.317317317\dots$
- Find two irrational numbers and two rational numbers between 0.5 and 0.55
- Simplify each of the following by rationalizing the denominator.
 - $\frac{7 + 3\sqrt{5}}{7 - 3\sqrt{5}}$
 - $\frac{2\sqrt{3} - \sqrt{5}}{2\sqrt{2} + 3\sqrt{3}}$
 - $\frac{7\sqrt{3} - 5\sqrt{2}}{\sqrt{48} + \sqrt{18}}$
- Simplify:- a) $3\sqrt{5} + -\sqrt{5} + \sqrt{180}$ (b) $\sqrt{54} + \sqrt{150}$
- Give an example each of two irrational numbers, whose
 - difference is a rational number
 - difference is an irrational number
 - sum is a rational number
 - sum is an irrational number
 - product is a rational number
 - product is an irrational number
 - quotient is a rational number
 - quotient is an irrational number
- Without actual division decide which of following rational numbers have terminating decimal representation:-
 - $\frac{33}{375}$
 - $\frac{15}{28}$
 - $\frac{16}{45}$
 - $\frac{12}{35}$
 - $\frac{80}{27}$
 - $\frac{123}{1250}$
- Examine whether the following numbers are rational or irrational
 - $\frac{3\sqrt{8}}{\sqrt{2}}$
 - $\left(\sqrt{2} + \frac{1}{2}\right)^2$
 - $\frac{22/7}{5\pi}$
 - $(3 + \sqrt{2})(2 - \sqrt{3})(3 - \sqrt{2})(2 + \sqrt{3})$
- Represent $\frac{8}{5}$ and $\sqrt{20}$ on a number line.
- (a) Represent $\sqrt{5.2}$ on a number line. (b) Visualize 0.436 on the number line
- Insert 6 rational numbers between $-\frac{2}{3}$ and $\frac{3}{4}$
- Find two irrational numbers between $\sqrt{3}$ and 2.
- Rationalise the denominator of $\frac{1}{1 - \sqrt{7}}$
- Given $\sqrt{3} = 1.732$ app., find to three places of decimal the value of $\frac{1 + 2\sqrt{3}}{2 - \sqrt{3}}$
- Find the values of 'a' and 'b' if
 - $\frac{5 + 2\sqrt{3}}{7 + 4\sqrt{3}} = a + b\sqrt{3}$
 - $\frac{5 + \sqrt{3}}{\sqrt{5} - \sqrt{3}} = \frac{1}{2}a + 3b\sqrt{15}$
- Simplify:- (a) $\frac{3}{\sqrt{5} - \sqrt{3}}$ (b) $\frac{2\sqrt{7}}{\sqrt{5} + \sqrt{3}}$
- Evaluate:- a) $(390625|6561)^{1/2}$ (b) $(1296)^{1/4} \times (1296)^{1/2}$