TARUN CLASSES OF MATHEMATICS
WORK WITH US & FEEL THE DIFFERENCE

NUMBER SYSTEM- Assignment

1) Find two rational & irrational numbers b/w $\frac{1}{7}$ & $\frac{2}{7}$.
2) Locate $\sqrt{10}$ on number line Or Locate $\sqrt{9.2}$ on number line.
3) Express $0.6 + 0.\overline{7} + 0.4\overline{7}$ in form of $\frac{p}{q}$.

   Express $2.01\overline{5}$ in form of $\frac{p}{q}$.
4) Simplify : $\frac{7\sqrt{3}}{\sqrt{10}+\sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{6}+\sqrt{5}} - \frac{3\sqrt{2}}{\sqrt{15}+3\sqrt{2}}$.
5) Give an example to show that quotient & sum of two different irrational numbers need not be an irrational number .
6) Let x and y be rational and irrational numbers, respectively. Is x + y necessarily an irrational number? Is xy necessarily irrational? Justify your answer by an example.
7) If a = $\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ & b = $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, Find the value of $a^2 + b^2 - 5ab$.
8) Find value of a & b if , $\frac{(\sqrt{7}+\sqrt{5})}{(\sqrt{7}-\sqrt{5})} - \frac{(\sqrt{7}-\sqrt{5})}{(\sqrt{7}+\sqrt{5})} = a + \frac{7}{11}\sqrt{5}b$.
9) Arrange in descending order : $\sqrt[3]{12}$, , $\sqrt[4]{20}$, $\sqrt[6]{25}$, , $\sqrt{80}$, $\sqrt[12]{112}$.
10) If x = $\frac{\sqrt{a+2b}+\sqrt{a-2b}}{\sqrt{a+2b}-\sqrt{a-2b}}$, Prove that $bx^2 - ax + b = 0$.
11) Are the square root of all positive integers irrational ? justify your answer.
12) If $[\sqrt{50} + \sqrt{48}]^{1/2} = k(\sqrt{3} + \sqrt{2})$, find value of k.
13) Solve for x: $2^{2x+1} + 4.4^x - 384 = 0$. Or Simplify : $\sqrt{5 + 2\sqrt{6}} - \sqrt{8 - 2\sqrt{15}}$.
14) If $(x^2 + \frac{1}{x^2}) = 14$, find the value of 'x'.
15) Insert a rational number and an irrational number between the following : a) √2 & √3 b) 2.357 and 3.121 c) -2/5 & 1/2
16) Express following numbers in the form p/q : a) 0.25626262…. b) 2.26121212…. c)) 0.6 + 0.7777…. +0.4777777…..
17) Which is greater √17 - √12 or √11 - √6 ?
18) If a = $\frac{3+\sqrt{5}}{2}$, then find the value of $a^2 + \frac{1}{a^2}$. OR If x = 9 - 4√5 , find the $\frac{1}{x}$, $\sqrt{x} - \frac{1}{\sqrt{x}}$.
19) Represent $\sqrt{6}$ on number line . Or Represent $2 + \sqrt{5}$ on number line .
20) Write in an ascending order : $\sqrt{6}$, $\sqrt[3]{12}$, $\sqrt[4]{24}$.
21) Find the values of a & b : $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$.
22) If a = $\frac{\sqrt{10}+\sqrt{5}}{\sqrt{10}-\sqrt{5}}$ & b = $\frac{\sqrt{10}-\sqrt{5}}{\sqrt{10}+\sqrt{5}}$, Then Show that : $\sqrt{a} - \sqrt{b} - 2\sqrt{ab} = 0$.