



INDIAN SCHOOL DARSAIT
DEPARTMENT OF MATHEMATICS



Subject : Mathematics

Topic : Number System

Date of Worksheet : 26-4-2017

Worksheet no: 2

(HOT QUESTIONS)

Resource Person: Mrs. AnuLikson

Name of the Student : _____

Class & Division : IX Roll Number : ____

1.	Prove that $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$	3
2.	Find the value of $\frac{3^3 + 3^2 + 3^2}{3^3 + 3^3 - 3^2}$	3
3.	Prove that $\left(\frac{x^d}{x^l}\right)^{\frac{1}{a}} \cdot \left(\frac{x^l}{x^c}\right)^{\frac{1}{l}} \cdot \left(\frac{x^c}{x^d}\right)^{\frac{1}{a}} = 1$	3
4.	If $\frac{3}{4\sqrt{5}-\sqrt{3}} + \frac{2}{4\sqrt{5}+\sqrt{3}} = a\sqrt{5} + b\sqrt{3}$, then find the values of a and b.	3
5.	Find the value of $\left(x - \frac{1}{x}\right)^3$, if $x = 1 + \sqrt{2}$.	3
6.	Rationalize the denominator of $\frac{1}{(\sqrt{2}+\sqrt{3})-\sqrt{4}}$	4
7.	Show that $\frac{1}{1+x^{a-b}} + \frac{1}{1+x^{b-a}} = 1$	4
8.	If $x = \frac{1}{3-2\sqrt{2}}$ and $y = \frac{1}{3+2\sqrt{2}}$, find the value of $x + y + xy$.	4
9.	If $x = \frac{\sqrt{p+2q} + \sqrt{p-2q}}{\sqrt{p+2q} - \sqrt{p-2q}}$ then show that $qx^2 - px + q = 0$	4
10.	Evaluate $\frac{1}{\sqrt{1} + \sqrt{2} + \sqrt{4} - \sqrt{5} - \sqrt{8}}$, given that $\sqrt{5} = 2.2$ and $\sqrt{10} = 3.2$	4