NUMBER SYSTEM

ASSIGNMENT NO. 27

1. Simplify: $\frac{6}{2\sqrt{3}-\sqrt{6}}+\frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}}-\frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$
2. If $\sqrt{2}=1.414$ and $\sqrt{3}=1.732$, find the value of $\frac{5}{3\sqrt{3}+2\sqrt{2}}-\frac{3}{3\sqrt{3}-2\sqrt{2}}$
3. Multiply $2\sqrt[3]{3}$ by $3\sqrt{2}$
4. Express $2.0\overline{15}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
5. Simplify the following expression: $(\sqrt{3}+1)(1-\sqrt{12})+\frac{9}{\sqrt{3}-\sqrt{12}}$
6. Represent $\sqrt{10}$ on the number line.
7. Find the value of $\frac{1}{1-\sqrt{2}}-\frac{1}{\sqrt{2}-\sqrt{3}}+\frac{1}{\sqrt{3}-\sqrt{4}}-\frac{1}{\sqrt{4}-\sqrt{5}}+\frac{1}{\sqrt{5}-\sqrt{6}}$
8. Simplify: $\frac{\sqrt{5}+2}{\sqrt{5}-2}-\frac{\sqrt{5}-2}{\sqrt{5}+2}$
9. If $x=\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y=\frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, find the value of x^2+y^2+xy
10. Insert three rational numbers between $\frac{3}{5}$ and $\frac{5}{7}$