9th - Maths

SN	
1	Evaluate: $\frac{64^{\frac{a}{6}}}{4^a} * \frac{2^{2a+1}}{2^{a-1}}$.
2	Simplify: $\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{a-c}+x^{b-c}}$.
3	Simplify: $\frac{2\sqrt{6}}{\sqrt{2}+\sqrt{3}} + \frac{6\sqrt{2}}{\sqrt{6}+\sqrt{3}} - \frac{8\sqrt{3}}{\sqrt{6}+\sqrt{2}}$.
4	Show that: $\frac{1}{(3-\sqrt{8})} - \frac{1}{(\sqrt{8}-\sqrt{7})} + \frac{1}{(\sqrt{7}-\sqrt{6})} - \frac{1}{(\sqrt{6}-\sqrt{5})} + \frac{1}{(\sqrt{5}-2)} = 5$
5	If $a = \frac{\sqrt{7}-\sqrt{6}}{\sqrt{7}+\sqrt{6}}$ and $b = \frac{\sqrt{7}+\sqrt{6}}{\sqrt{7}-\sqrt{6}}$, then find the value of $a^2 + b^2 + ab$.
6	If $x = 9 - 4\sqrt{5}$, then find $x + \frac{1}{x}$.
7	If $x = 9 - 4\sqrt{5}$, then find $x - \frac{1}{x}$.
8	If $x = 9 - 4\sqrt{5}$, then find $x^2 + \frac{1}{x^2}$.
9	If $x = 9 - 4\sqrt{5}$, then find $x^2 - \frac{1}{x^2}$.
10	If $x = 9 - 4\sqrt{5}$, then find $x^3 + \frac{1}{x^3}$.
11	If $x = 9 - 4\sqrt{5}$, then find $x^3 - \frac{1}{x^3}$.
12	If $x = 9 - 4\sqrt{5}$, then find $\sqrt{x} + \frac{1}{\sqrt{x}}$.

13	If $x = 9 - 4\sqrt{5}$, then find $\sqrt{x} - \frac{1}{\sqrt{x}}$.
14	If $x = 9 - 4\sqrt{5}$, then find $x^4 + \frac{1}{x^4}$.
15	If $x = 9 - 4\sqrt{5}$, then find $x^6 + \frac{1}{x^6}$.
16	If $x = 9 - 4\sqrt{5}$, then find $x - \frac{14}{x}$.
17	If $a = 1 + \sqrt{7}$, find the value of $\frac{-6}{a}$.
18	If $p = 5 - 2\sqrt{6}$, find the value of $p^2 + \frac{1}{p^2} and p^2 - \frac{1}{p^2}$.
19	Express $0.3\bar{1}\bar{7}\bar{8}$ in the form of p/q where p and q are integers and $q \neq 0$.
20	If $\sqrt{2} = 1.414$, then find the value of $\sqrt{8} + \sqrt{50} + \sqrt{72} + \sqrt{98}$.
21	Find the value of $\frac{4}{(216)^{\frac{-2}{3}}} + \frac{1}{(256)^{\frac{-3}{4}}} + \frac{2}{(243)^{\frac{-1}{5}}}$.
22	Do as directed add $\sqrt{125} + 2\sqrt{27} and - 5\sqrt{5} - \sqrt{3}$.
23	Do as directed add $\sqrt{7} - \sqrt{11} and \sqrt{5} - \sqrt{11} + \sqrt{13}$.
24	Simplify $(2\sqrt{2} + 3\sqrt{3})(2\sqrt{2} - 3\sqrt{3})$.
25	Simplify $(6 - \sqrt{2})(2 + \sqrt{3})$.

26	Evaluate $\frac{2^{38}+2^{37}+2^{36}}{2^{39}+2^{38}+2^{37}}$
27	Find the value of a if $\frac{6}{3\sqrt{2}-2\sqrt{3}} = 3\sqrt{2} - a\sqrt{3}$.
28	Simplify $\frac{(25)^{\frac{3}{2}} * (243)^{\frac{3}{5}}}{(16)^{\frac{3}{4}} * (8)^{\frac{4}{3}}}$.
29	Express $0.6 + 0.\bar{7} + 0.4\bar{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
30	Rationalise the denominator of $\frac{1}{\sqrt{3}+\sqrt{5}+\sqrt{7}}$.
31	Find a and b if $\frac{7+3\sqrt{5}}{2+\sqrt{5}} - \frac{7-3\sqrt{5}}{2-\sqrt{5}} = a + b\sqrt{5}$.
32	Find four rational numbers between $\frac{2}{9} and \frac{3}{7}$.
33	Find two irrational numbers between $\sqrt{23} and \sqrt{24}$.
34	Write two numbers whose decimal expansions are non-terminating and non-repeating (non-recurring).
35	Represent $\sqrt{3}$ on the number line.
36	Represent $\sqrt{5}$ on the number line.
37	Simplify: $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{80}+\sqrt{48}-\sqrt{45}-\sqrt{27}}$
38	If x=2 and y=4, then $(\frac{x}{y})^{x-y} + (\frac{y}{x})^{y-x}$ =...