SATISH CHANDRA MEMORIAL SCHOOL

CLASS: IX MATHEMATICS

HOT QUESTIONS (Ch: Number System & Polynomials)

Asim sarker

1. Expand : $(2a - 3b + 4c)^2$
2. If -4 is the zero of the polynomial$p(x) = x^2 + 11x + k$, then value of k is.....
3. Find the value of a for which (x-a) is a factor of the polynomial f(x)=$x^5 - a^2x^3 + 2x + a - 3$
4. If x+y+z=9 , xy+yz+zx = 23 then find $x^3 + y^{+3} + z^3 - 3xyz$
5. If (x – 3 and (x - $\frac{1}{3}$) are both factors of ax^2 + 5 x + b , then show that a = b
6. By using factor theorem find remainder when $x^3 + 3x^2 + 3x + 1$ is divided by $(x - \frac{1}{2})$
7. Let p and q are the remainders when the polynomials $x^3 + 2x^2 - 5ax - 7\ and\ x^3 + ax^2 - 12x + 6$ are divided by $(x + 1) and\ (x - 2)$. If 2p + q = 6, find the value of a.
8. If $a^2 + b^2 + c^2 = 250\ and\ ab + bc + ca = 3\ find\ (a + b + c)$
9. Factorise: $2(5x - \frac{1}{x})^2 - 3\left(5x - \frac{1}{x}\right) - 2$
10. If x = 2+ $\sqrt{3}$, find the value of $x^2 + \frac{1}{x^2}$
11. Prove that: $(\frac{2^a}{2^b})^{a+b} \times (\frac{2^b}{2^c})^{b+c} \times (\frac{2^c}{2^a})^{c+a} = 1$
12. Express 5.2 $\bar{1}$n the form of p/q.
13. Find the values of a and b if $\frac{7+3\sqrt{7}}{3+\sqrt{5}} - \frac{7-3\sqrt{7}}{3-\sqrt{5}} = a + \sqrt{5}b$
14. Locate $\sqrt{4.7}$ on the number line.
15. Prove that $\frac{2^{30}+2^{29}+2^{28}}{2^{31}+2^{30}-2^{29}} = \frac{7}{10}$
16. If $x = 7 - 4\sqrt{3}\ then\ find \sqrt{x} + \frac{1}{\sqrt{x}}$
17. Simplify The following Expression $\frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}} + \frac{\sqrt{6}}{\sqrt{2}+\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}$
18. Prove that: $\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{a-c}+x^{b-c}} = 1$