

POLYNOMIALS

1. Find the value of p for which $x+p$ is factor of $x^2+px+3-p$
2. Write the coefficient of x^2 in expansion of $(x-2)^3$
3. Verify whether $x = -\frac{1}{\sqrt{3}}$ is zero of $3x^2-1$
4. Find the product $\left(y^2 + \frac{3}{2}\right)\left(y^2 - \frac{3}{2}\right)$
5. Find the common factor of the polynomials $x^2+8x+15$ and $x^2+3x-10$
6. Factorize $(16y^2-1) + (1-4y)^2$
7. Find the value of a , if $x+a$ is a factor of $x^4-a^2x^2+3x-a$.
8. Verify that $x^3-y^3 = (x-y)(x^2+xy+y^2)$
9. Simplify $(x+y+z)^2 - (x-y+z)^2$
10. Factorize $(x^2-2x)^2 - 2(x^2-2x) - 3$
11. Factorize $9a^3-27a^2-100a+300$, if it is given that $(3a+10)$ is a factor of it.
12. If $a+b+c=12$, $a^2+b^2+c^2=90$, find the value of $a^3+b^3+c^3-3abc$
13. Show that $\frac{1}{3}$ and $\frac{4}{3}$ are zeroes of the polynomial $9x^3 - 6x^2 - 11x + 4$. Also, find the third zero of the polynomial

14. If $x^2 + px + q = (x+a)(x+b)$, then factorize $x^2 + pxy + qy^2$

15. Find the value of p and q if $a^2 - 1$ is a factor of $pa^4 - 7a^3 + 9a^2 + qa - 10$

16. Let P and R be the remainders when the polynomial $f(x) = 4x^3 + 3x^2 - 12ax - 5$ and $g(x) = 2x^3 + ax^2 - 6x + 2$ are divided by $(x - 1)$ and $(x + 2)$ respectively. If $3P + R + 28 = 0$, find the value of a .