

1. Evaluate the following: $\left(\frac{3}{2}x + 1\right)^3 - \frac{27x^2}{4} - \frac{9x}{2}$
2. If $x = 2$ and $x = 0$ are the zeroes of the polynomial $f(x) = 2x^3 - 5x^2 + ax + b$, find the values of a and b .
3. Factorise: $x^3 - 6x^2 + 11x - 6$
4. Without actual division prove that $x^4 + 2x^3 - 2x^2 + 2x - 3$ is exactly divisible by $x^2 + 2x - 3$.
5. Find the value of p if $(x - p)$ is a factor of $x^5 - p^2x^3 + 2x + p + 3$. Hence factorise $x^2 + 4px + 3$.
6. Evaluate by using suitable identity $(998)^3$
7. If $x^2 - 1$ is a factor of $ax^3 + bx^2 + cx + d$ show that $a + c = 0$.
8. Factorise:
 - a. $x^2 + \frac{1}{x^2} + 2 - 2x - \frac{2}{x}$
 - b. $x^4 - y^4$
9. Factorise:
 - a. $27a^3 + 8b^3 + 54a^2b + 36ab^2$
 - b. $8x^3 + 64$
10. If the polynomial $p(x) = x^4 - 2x^3 + 3x^2 - ax + 8$ is divided by $(x - 2)$ leaves the remainder 10, then find the value of a .