

1. Factorise:  $2y^3 + y^2 - 2y - 1$ .
2. Using suitable identity evaluate  $(103)^3$
3. Factorise:  $27p^3 - \frac{1}{216} - \frac{9}{2}p^2 + \frac{1}{4}p$
4. Factorise:  $a^6 - b^6$
5. If  $x = 2$  and  $x = 0$  are zeroes of the polynomial  $2x^3 - 5x^2 + px + b$ , then find the values of  $p$  and  $b$ .
6. Simplify and factorise:  $(a + b + c)^2 - (a - b - c)^2 + 4b^2 - 4c^2$
7. If  $a + b + c = 6$  and  $ab + bc + ca = 11$ , find the value of  $a^3 + b^3 + c^3 - 3abc$ .
8. The polynomials  $bx^3 + 3x^2 - 3$  and  $2x^3 - 5x + b$  when divided by  $x - 4$  leave the remainders  $R_1$  and  $R_2$  respectively, find the value of  $b$  if  $2R_1 - R_2 = 0$ .
9. Factorise:  $x^2 + 3\sqrt{3}x + 6$
10. Find the value of the polynomial  $x^2 - 9$  for  $x = 97$