1. Using division algorithm, find the quotient and the remainder on dividing f(x) by g(x) , where

    $f(x) = 6x^3 + 13x^2 + x - 2$ and $g(x) = 2x+1$

2. Divide $2x^2 + 3x + 1$ by $x + 2$.

3. Find the zeroes of the following quadratic polynomials and verify the relationship between the zeroes and the coefficients:

    (i) $6x^2 - 3 - 7x$

    (ii) $4u^2 + 8u$

4. If α , β are the zeros of $2y^2 + 7y + 5$ write the value of $\alpha + \beta + \alpha\beta$.

5. If x=1 is a zero of a polynomial $f(x) = x^3 - 2x^2 + 4x + k$. Write the value of k

6. Find a quadratic polynomial each with the given zeros as sum and the product of its zeros respectively
    (a) ¼, -1
    (b) $\sqrt{2}$, 1/3

7. Find the zeros of a quadratic polynomial $5x^2 - 4 - 8x$ and verify the relationship between the zeros and the coefficients of the polynomial.

8. Find all other zeroes of the polynomial $p(x) = 2x^3 + 3x^2 - 11x - 6$, if one of its zero is –3.

9. Find all the zeros of $2x^4 - 9x^3 + 5x^2 + 3x - 1$, if two of its zeros are $2+\sqrt{3}$ & $2 - \sqrt{3}$.

10. If $(x + a)$ is a factor of $2x^2 + 2ax + 5x + 10$. Find a.

11. If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder comes out to be $(ax + b)$, find a and b.

12. On dividing $x^3 + 2x^2 - 5x - 6$ by a polynomial g(x) the quotient and remainder were x+1 and - 4x -4 respectively Find the polynomial g(x).

13. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder were x – 2 and $-2x + 4$, respectively. Find g(x).