

## PRACTICE TEST: CLASS-X

### Maths X Polynomials

1. If  $\alpha$  and  $\beta$  are the zeroes of the quadratic polynomial  $f(x) = 2x^2 - 5x + 7$ , find a polynomial whose zeroes are  $2\alpha + 3\beta$  and  $3\alpha + 2\beta$ .
2. Find the values of  $a$  and  $b$  so that  $x^4 + x^3 + 8x^2 + ax + b$  is divisible by  $x^2 + 1$ .
3. If the polynomial  $6x^2 + 8x^3 - 5x^2 + ax + b$  is exactly divisible by the polynomial  $2x^2 - 5$ , then find the values of  $a$  and  $b$ .
4. If the product of the zeroes of the polynomial  $ax^2 - 6x - 6$  is 4, find the value of  $a$ .
5. If the polynomial  $x^4 - 6x^3 - 26x^2 + 138x - 35$  has zeroes  $2 \pm \sqrt{3}$ , find other zeroes.
6. 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  $b$ .
7. Find a cubic polynomial whose sum, sum of the product of the zeroes taken two at a time, and product of its zeroes are  $-2$ ,  $-7$ ,  $-14$ , respectively.
8. If zeroes of the polynomial  $x^3 - 3x^2 + x + 1$  are  $a - b$ ,  $a$ ,  $a + b$ , find  $a$  and  $b$ .
9. If  $\alpha$  and  $\beta$  are the zeroes of the polynomial  $ax^2$  then evaluate-  
(a)  $1/\alpha^3 + 1/\beta^3$  (b)  $\alpha^2/\beta + \beta^2/\alpha$ .
10. If  $\alpha$  and  $\beta$  are the zeroes of the quadratic polynomial  $2x^2 - 5x + 7$ . Find a quadratic polynomial whose zeroes are  $\alpha^2/\beta$  and  $\beta^2/\alpha$ .