

 **Mathematics****Time: 1 Hour****(Polynomials) (Test – 1) (Class X)****MM. 25****1 mark each**

1. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2 respectively.
2. Find a quadratic polynomial with zeroes $3 + \sqrt{2}$ and $3 - \sqrt{2}$.

2 marks each

3. If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $2x^2 - 5x - 3$. Find the value of p and q .
4. If m and n are the zeroes of the polynomial $ax^2 - 5x + c$, find the value of a and c , when $m + n = mn = 10$.
5. Divide the polynomial $3x^2 - x^3 - 3x + 5$ by the polynomial $x - 1 - x^2$.

3 marks each

6. If α and β are the zeroes of the polynomial $p(x) = x^2 - 8x + k$, such that $\alpha^2 + \beta^2 = 40$, find the value of k .
7. If α and β are the zeroes of the polynomial $3x^2 - x - 4$, find the value of $\alpha^4\beta^3 + \alpha^3\beta^4$.
8. If two zeroes of the polynomial $f(x) = x^3 - 4x^2 - 3x + 12$ are $\sqrt{3}$ and $-\sqrt{3}$, then find the third zero.



4 marks each

9. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are $a - b$, a and $a + b$, find the value of a and b .
10. If α and β are the zeroes of the polynomial $p(x) = 6x^2 - 5x + k$, such that $\alpha - \beta = \frac{1}{6}$, find the value of k .



Answers

1. $x^2 + 3x + 2$
2. $x^2 - 6x + 7$
3. $p = -\frac{23}{4}$ and $q = -\frac{3}{2}$
4. $a = \frac{1}{2}$ and $c = 5$
5. Quotient = $x - 2$ and remainder = 3.
6. $k = 12$.
7. $-\frac{64}{81}$
8. Third zero is 4.
9. Either $a = 1$ and $b = \sqrt{2}$ or $a = 1$ and $b = -\sqrt{2}$
10. $k = 1$.

