Chapter-2 Polynomials

WORKSHEET-2

1. A quadratic polynomial having zeroes $-\sqrt{\frac{5}{2}}$ & $\sqrt{\frac{5}{2}}$ is
   a) $x^2 - 5\sqrt{2}x + 1$ b) $8x^2 - 20$ c) $15x^2 - 6$ d) $x^2 - 2\sqrt{5}x - 1$
2. If α & β are zeroes of a polynomial $6x^2 - 5x + 1$ then form a quadratic polynomial whose zeroes are α^2 & β^2.
3. The graph of a quadratic polynomial p(x) passes through the points (-6,0), (0,-30), (4,-20) & (6,0). The zeroes of the polynomial are:
   a) -6,0 b) 4,6 c) -30,-20 d) -6,6
4. If the sum of zeroes of the polynomial p(x)=$2x^2 - k\sqrt{2}x + 1$ is $\sqrt{2}$. Find the value of k.
5. The zeroes of a polynomial $x^2 - px + q$ are twice the zeroes of the polynomial $4x^2 - 5x - 6$. Find the value of p.
6. If $\frac{m}{2}$ and $\frac{n}{2}$ are the zeroes of the quadratic polynomial $3x^2 + 5x + 7$, then find a quadratic polynomial whose zeroes are 2m+3n & 3m+2n.
7. Find the zeroes of the quadratic polynomial $x^2 - 3\sqrt{3}x + 6$ and verify the relationship between zeroes and their coefficient.
8. If α & β are the zeroes of the quadratic polynomial $3x^2 + 2x - 1$, find the polynomial whose zeroes are $2\alpha + 1$ & $2\beta + 1$.
9. If α & β are the zeroes of the quadratic polynomial $2x^2 + 5x + k$, then find the value of k such that $(\alpha + \beta)^2 - \alpha\beta = 24$.
10. If one root of the equation $4x^2 - 2x + (\lambda - 4) = 0$ be the reciprocal of the other then find the value of λ.
11. If α & β are the zeroes of the quadratic polynomial $f(x) = x^2 + px + q$. Find the polynomial whose zeroes are $\frac{1}{\alpha}$ & $\frac{1}{\beta}$.
12. If α & β are the zeroes of the quadratic polynomial such that $\alpha + \beta = 24$ and $\alpha - \beta = 8$. Find the quadratic polynomial.
13. If α & β are the zeroes of the quadratic polynomial $3x^2 - 5x + 2$. Then find the value of $\alpha^3 + \beta^3$.

14. If α & β are the zeroes of the quadratic polynomial $5x^2 - 7x - 9$, then find a quadratic polynomial whose zeroes are $\frac{\alpha}{2\alpha+\beta}$ *and* $\frac{\beta}{2\beta+\alpha}$.
15. If α & β are the zeroes of the quadratic polynomial $x^2 - 7x + k$, then find the value of k , such that $\alpha^2 + \beta^2 = 29$.
16. If α & β are the zeroes of the quadratic polynomial $f(x) = x^2 - x - 4$, find $\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\beta$.
17. If one zero of $3x^2 + 8x + k$ be the reciprocal of the other then find k.
18. If α & β are the zeroes of the quadratic polynomial $2x^2 + x - 5$, then find a polynomial whose zeroes are $\frac{\alpha}{\beta}$ *and* $\frac{\beta}{\alpha}$?