SHRI DHARMASTHALA MANJUNATHESHWARA SCHOOL, ASHOKNAGAR, MANGALURU

MATHEMATICS GRADE 10 - WORKSHEET 2

1. Find the quadratic polynomial whose zeroes are $2 + \sqrt{3}$ and $2 - \sqrt{3}$.
2. Find the quadratic polynomial whose sum and product are $\sqrt{2}$ and 3 respectively.
3. If (x – 6) is a factor of $x^3 + ax^2 + bx - b = 0$ and $a - b = 7$, find the values of *a* and *b*.
4. Obtain all zeroes of polynomial $f(x) = 2x^4 + x^3 - 14x^2 - 19x - 6$ if two of its zeroes are –2 and –1.
5. Find the zeroes of the following polynomials by factorisation method and verify the relations between the zeroes and the coefficients of the polynomials:

   i) $4x^2 - 3x - 1$ ii) $3x^2 + 4x - 4$ iii) $5t^2 + 12t + 7$

   iv) $t^3 - 2t^2 - 15t$ v) $4x^2 + 5\sqrt{2x} - 3$

6. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then find the value of *k.*
7. Verify that 3, –2 and 1 are the zeroes of the cubic polynomial $p(x) = x^3 - 2x^2 - 5x + 6$ and verify the relation between its zeroes and coefficients.
8. Find the zeroes of the quadratic polynomial $6x^2 - 7x - 3$ and verify the relationship between the zeroes and the coefficients.
9. Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively:

   i) 3 and 4 ii) $-2 \; and \; \frac{3}{2}$

   iii) $-\frac{3}{2} \; and \; 0$ iv) $-\sqrt{2} \; and \; \sqrt{3}$