INTERNATIONAL INDIAN SCHOOL, RIYADH
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WORK SHEET

CLASS : X SUBJECT: Mathematics. LESSON: POLYNOMIALS.
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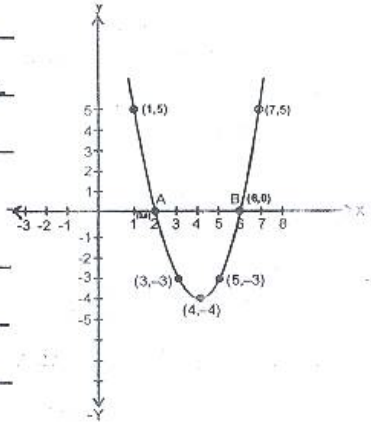
1. Find the zeros of each of the following polynomials and Verify the relationship between the zeros and the coefficients: i) $7x^2 - 25x - 12$ ii) $4x^2 - 17x - 21$
iii) $\sqrt{3}x^2 + 10x + 7\sqrt{3}$

2. In the adj. figure, the graph of a quadratic polynomial $f(x)$ is given Find the zeros of $f(x)$.



3. Find the coordinates of the points where the graph of the polynomial $y = x^2 + x - 6$ intersects x-axis.

4. Find the zeros of the cubic polynomial $x^3 + 2x^2 - x - 2$.

5. Find a cubic polynomial whose zeros are 1, -2 and 3

6. Find a quadratic polynomial whose zeros are $5 + \sqrt{2}$ and $5 - \sqrt{2}$

7. Find a quadratic polynomial, the sum of whose zeros is 8 and their product is 12. Hence find the zeros of the polynomial.

8. If $\sqrt{3}$ and $-\sqrt{3}$ are two of the zeros of the polynomial $f(x) = x^4 - 3x^3 - x^2 + 9x - 6$, find the other zeros.

9. Obtain all the zeros of the polynomial $f(x) = 2x^4 + x^3 - 14x^2 - 19x - 6$, if two of its zeros are -2 and -1

10. Two zeros of the polynomial $ax^3 + 3x^2 - bx - 6$ are -1 and -2, find the values of a and b. Also find the third zero.

11. Find all the zeros of the polynomial $2x^4 - 2x^3 - 7x^2 + 3x + 6$, if two zeros are $-\sqrt{\frac{3}{2}}$ and $\sqrt{\frac{3}{2}}$

12. Verify that $\frac{1}{2}$, 1, -2 are zeros of the polynomial $2x^3 + x^2 - 5x + 2$. Also verify that the sum of the zeros $= -\frac{b}{a}$ and the product of the zeros $= -\frac{d}{a}$

13. $x^4 + x^3 + 8x^2 + ax + b$ is exactly divisible by $x^2 + 1$. Find the values of a and b

14. If α and β are the zeros of the polynomial $x^2 - 8x + 15$, find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ without finding the zeros

15. Divide $f(x) = 14x^3 - 5x^2 + 9x + 1$ by $g(x) = 2x - 1$ and obtain the quotient $q(x)$ and the rem. $r(x)$. Verify the division algorithm $f(x) = g(x) \cdot q(x) + r(x)$

16. If one zero of the polynomial $x^2 - 4x + 1$ is $2 + \sqrt{3}$, find the other