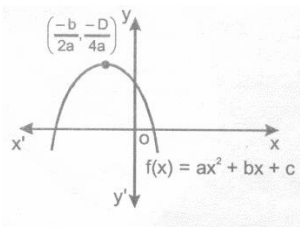


CLASS X- MATHEMATICS POLYNOMIALS

ASSIGNMENT-1

MULTIPLE CHOICE QUESTION - 1.1

1. If $4x^4 - 3x^3 - 3x^2 + x - 7$ is divided by $1 - 2x$ then remainder will be
 (A) $\frac{57}{8}$ (B) $-\frac{59}{8}$ (C) $\frac{55}{8}$ (D) $-\frac{55}{8}$
2. The polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ when divided by $(x - 4)$ leaves remainders R_1 & R_2 respectively then value of 'a' if $2R_1 - R_2 = 0$.
 (A) $-\frac{18}{127}$ (B) $\frac{18}{127}$ (C) $\frac{17}{127}$ (D) $-\frac{17}{127}$
3. A quadratic polynomial is exactly divisible by $(x + 1)$ & $(x + 2)$ and leaves the remainder 4 after division by $(x + 3)$ then that polynomial is
 (A) $x^2 + 6x + 4$ (B) $2x^2 + 6x + 4$ (C) $2x^2 + 6x - 4$ (D) $x^2 + 6x - 4$
4. The values of a & b so that the polynomial $x^3 - ax^2 - 13x + b$ is divisible by $(x - 1)$ & $(x + 3)$ are
 (A) $a = 15, b = 3$ (B) $a = 3, b = 15$ (C) $a = -3, b = 15$ (D) $a = 3, b = -15$
5. Graph of quadratic equation is always a -
 (A) straight line (B) circle (C) parabola (D) Hyperbola
6. If the sign of 'a' is positive in a quadratic equation then its graph should be =
 (A) parabola open upwards (B) parabola open downwards
 (C) parabola open leftwards (D) can't be determined
7. The graph of polynomial $y = x^3 - x^2 + x$ is always passing through the point -
 (A) (0, 0) (B) (3, 2) (C) (1, -2) (D) all of these
8. How many time, graph of the polynomial $f(x) = x^3 - 1$ will intersect X-axis -
 (A) 0 (B) 1 (C) 2 (D) 4
9. Which of the following curve touches X-axis -
 (A) $x^2 - 2x + 4$ (B) $3x^2 - 6x + 1$ (C) $4x^2 - 16x + 9$ (D) $25x^2 - 20x + 4$
10. In the diagram given below shows the graphs of the polynomial $f(x) = ax^2 + bx + c$, then
 (A) $a < 0, b < 0$ and $c > 0$
 (B) $a < 0, b < 0$ and $c < 0$
 (C) $a < 0, b > 0$ and $c > 0$
 (D) $a < 0, b > 0$ and $c < 0$



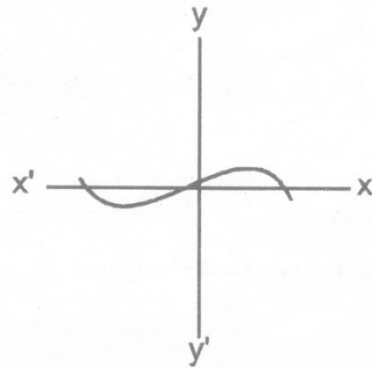
SUBJECTIVE QUESTION 1.2

- Draw the graph of following polynomials.
 - $f(x) = -3$
 - $f(x) = x - 4$
 - $f(x) = |x + 2|$
 - $f(x) = x^2 - 9$
 - $f(x) = 2x^2 - 4x + 5$
 - $f(x) = x(2 - 3x) + 1$
 - $f(x) = x^3 - x^2$
 - $f(x) = x^3 + 2x$
- Find the zeros of quadratic polynomial $p(x) = 4x^2 + 24x + 36$ and verify the relationship between the zeros and their coefficients.
- Find a quadratic polynomial whose zeros are 5 and -5.
- Sum and product of zeros of a quadratic polynomial are 2 and $\sqrt{5}$ respectively. Find the quadratic polynomial.
- Find a quadratic polynomial whose zeros are $3 + \sqrt{5}$ and $3 - \sqrt{5}$.
- Verify that $-5, \frac{1}{2}, \frac{3}{4}$ are zeros of cubic polynomial $4x^3 + 20x^2 + 2x - 3$. Also verify the relationship between the zeros and the coefficients.
- Divide $64y^3 - 1000$ by $8y - 20$.
- If α, β are zeros of $x^2 + 5x + 5$, find the value of $\alpha^{-1} + \beta^{-1}$.
- Apply the division algorithm to find the quotient and remainder on dividing $p(x) = x^4 - 3x^2 + 4x + 5$ by $g(x) = x^2 + 1 - x$.
- On dividing $x^3 - 3x^2 + x + 2$ by polynomial $g(x)$, the quotient remainder were $x - 2$ and $-2x + 4$, respectively. Find $g(x)$.
- α, β, γ are zeros of cubic polynomial $x^3 - 12x^2 + 44x + c$. If α, β, γ are in A.P., find the value of c .
- Obtain all the zeros of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeros are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.
- What must be added to $x^3 - 3x^2 - 12x + 19$ so that the result is exactly divisible by $x^2 + x - 6$?
- What must be subtracted from $x^4 + 2x^3 - 13x^2 - 12x + 21$ so that the result is exactly divisible by $x^2 - 4x + 3$?
- If α, β are zeros of quadratic polynomial $kx^2 + 4x + 4$, find the value of k such that $(\alpha + \beta)^2 - 2\alpha\beta = 24$.
- Find the quadratic polynomial sum of whose zeros is 8 and their product is 12. Hence find the zeros of the polynomial.

[CBSE - 2018]

17. Is $x = -4$ a solution of the equations $2x^2 + 5x - 12 = 0$? [CBSE - 2018]

18. Write the number of zeros of the polynomial $y = f(x)$ whose graph is given figure [CBSE - 2018]



19. If the product of zeros of the polynomial $ax^2 - 6x - 6$ is 4, find the value of 'a'. [CBSE - 2019]