Chapter 2

ASSIGNMENT

OBJECTIVE EX. - 2.1

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) c = - 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) $25x^2 - 20x + 4$

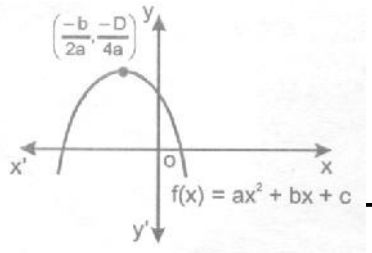
10. In the diagram given below shows the graphs of the polynomial $f(x) = ax^2 + bx + c$, then

(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 EX. - 2.2

1. Draw the graph of following polynomials.

a. $f(x) = -3$ **b.** $f(x) = x - 4$ **c.** $f(x) = |x + 2|$

d. $f(x) = x^2 - 9$ **e.** $f(x) = 2x^2 - 4x + 5$ **f.** $f(x) = x(2 - 3x) + 1$

g. $f(x) = x^3 - x^2$ **h.** $f(x) = x^3 + 2x$

2. Find the zeros of quadratic polynomial $p(x) = 4x^2 + 24x + 36$ and verify the relationship between the zeros and their coefficients.

3. Find a quadratic polynomial whose zeros are 5 and - 5.

4. Sum and product of zeros of a quadratic polynomial are 2 and $\sqrt{5}$ respectively. Find the quadratic polynomial.

5. Find a quadratic polynomial whose zeros are $3+\sqrt{5}$ and $3-\sqrt{5}$.

6. Verify that $-5, \frac{1}{2}, \frac{3}{4}$ are zeros of cubic polynomial $4x^3 + 20x + 2x - 3$. Also verify the relationship between the zeros and the coefficients.

7. Divide $64y^3 - 1000$ by $8y - 20$.

8. If α, β are zeros of $x^2 + 5x + 5$, find the value of $\alpha^{-1} + \beta^{-1}$.

9. Apply the division algorithm to find the quotient and remainder on dividing $p(x) = x^4 - 3x^2 + 4x + 5$ by $g(x) = x^2 + 1 - x$.

10. 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).

11. 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.

12. Obtain all the zeros of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeros are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.

13. What must be added to $x^3 - 3x^2 - 12x + 19$ so that the result is exactly divisible by $x^2 + x - 6$?

14. What must be subtracted from $x^4 + 2x^3 - 13x^2 - 12x + 21$ so that the result is exactly divisible by $x^2 - 4x + 3$?

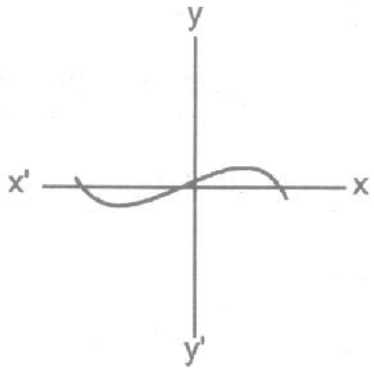
15. If α, β are zeros of quadratic polynomial $kx^2 + 4x + 4$, find the value of k such that $(\alpha + \beta)^2 - 2\alpha\beta = 24$.

16. Find the quadratic polynomial sum of whose zeros is 8 and their product is 12. Hence find f the zeros of the polynomial.

[CBSE - 2008]

17. Is x = - 4 a solution of the equations $2x^2 + 5x - 12 = 0$ > **[CBSE – 2008]**

18. Write the number of zeros of the polynomial y = f(x) whose graph is given figure **[CBSE - 2008]**



19. If the product of zeros of the polynomial $ax^2 - 6x - 6$ is 4, find the value of 'a'. **[CBSE - 2008]**