Anita's Coaching Classes

Marks :35
Time:1:30hr

1. If two polynomials $ax^3 + 4x^2 + 3x - 4$ & $x^3 - 4x + a$ leave the same remainder when divided by $(x - 3)$, find the value of a.
2. Evaluate using identities:- (a) 103 x 97 (b) $(0.99)^2$ (c) 105^3
3. Find the remainder when $4x^3 — 3x^2 + 2x — 4$ is divided by x+2.
4. Show that $(x - 1)$ is a factor of $x^{10} - 1$
5. Find the value of a, if $(x - a)$ is a factor of $x^3 - a^2x + x + 2$.
6. Determine the value of a for which the polynomial $2x^4 - ax^3 + 4x^2 + 2x + 1$ is divisible by $(1 - 2x)$.
7. Factorize the polynomials:-
   (a) $x^3 - 6x^2 + 11x - 6$ (b) $(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3$
   (c) $x^3 + 13x^2 + 31x - 45$ given that x + 9 is a factor
   (d) $8x^3 + 27^3 + z^3 - 18xyz$
   (e) $(a + b)^3 + (b + c)^3 + (c + a)^3 - 3 (a + b) (b + c) (c + a)$
8. Factorize:-
   (a) $a^3 - 0.216$ (b) $2x^2 - \frac{5}{6}x + \frac{1}{12}$
   (c) $(x + 1)^3 + (x - 1)^3$
9. Give possible expressions for the length and breadth of a rectangle having $A = 35y^2 + 13y - 12$ (Area).
10. Evaluate using a suitable identity:- $(1.93)^3 + (0.07)^3 — (2)^3$

11. Find the product: $(2x - y + 3z) (4x^2 + y^2 + 9z^2 + 2xy + 3yz - 6xz)$
12. Factorize by splitting the middle term :
    (a) $9x^2 - 3x — 9$ (b) $x^2 + 14x + 40$ (c) $5x^2 + 16x + 3$