R S Foundation for Maths & Science

Malkapur

WORKSHEET- POLYNOMIALS AND FACTORISATION

Class 09 - Mathematics

1. Write the remainder when the polynomial $f(x) = x^3 + x^2 - 3x + 2$ is divided by $x + 1$ **[1]**
2. Divide $(2x^2 - x + 3)$ by $(2 - x)$ and write the quotient and the remainder. **[1]**
3. If $p(x) = 5x - 10$ is divided by $x - \sqrt{2}$, then find remainder. **[1]**
4. $p(x) = ax^2 + bx + c$. If $a + b + c = 0$, then find one of its zero. **[1]**
5. Find the remainder when $f(x) = 4x^3 - 12x^2 + 14x - 3$ is divided by $g(x) = (2x - 1)$. **[2]**
6. Find the remainder when $x^3 - ax^2 + 6x - a$ is divided by $x - a$. **[2]**
7. Check whether g(x) is a multiple of p(x) or not : $p(x) = x^3 - 5x^2 + 4x - 3$, $g(x) = x - 2$ **[2]**
8. By Remainder Theorem find the remainder, when p(x) is divided by g(x), where $p(x) = x^3 - 3x^2 + 4x + 50$, $g(x) = x - 3$ **[2]**
9. If $x + 1$ is a factor of $x^3 + a$, then write the value of a. **[1]**
10. Check whether $3x - 7$ is a factor of polynomial $6x^3 + x^2 - 26x - 25$? **[1]**
11. Using factor theorem, show that g(x) is a factor of p(x), when $p(x) = 2x^3 + 7x^2 - 24x - 45$, $g(x) = x - 3$. **[2]**
12. If $x - 2$ is a factor of polynomial, find the value of a: $x^5 - 3x^4 - ax^3 + 3ax^2 + 2ax + 4$ **[2]**
13. Use factor theorem to show that $x^4 + 2x^3 - 2x^2 + 2x - 3$ is exactly divisible by $(x + 3)$. **[2]**
14. Find the value of k for which $(x - 1)$ is a factor of $(2x^3 + 9x^2 + x + k)$. **[2]**
15. Find the zeroes of $\sqrt{3}x^2 + 10x + 7\sqrt{3}$. **[2]**
16. Determine polynomial has $x - 2$ a factor : $3x^2 + 6x - 24$ **[2]**
17. Factorise: $8x^3 + 27y^3 + 36x^2y + 54xy^2$ **[2]**
18. Factorise: $49a^2 + 70ab + 25b^2$ **[2]**
19. Factorise: $2x^2 - 7x - 15$ **[2]**
20. Factorise: $64m^3 - 343n^3$ **[2]**
21. Expand using suitable identity: $(x + 2y + 4z)^2$ **[2]**
22. If a, b, c are all non-zero and $a + b + c = 0$, prove that $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab} = 3$. **[2]**
23. Write $(2a - 3b)^3$ cube in expanded form. **[2]**
24. Factorize: $8a^3 - b^3 - 4ax + 2bx$ **[2]**
25. Simplify: $\frac{155\times155\times155-55\times55\times55}{155\times155+155\times55+55\times55}$ **[2]**
26. Expand $(4a - 2b - 3c)^2$ **[2]**
27. Write (2x + 1)^3 cube in expanded form. **[2]**
28. Give possible expression for the length and breadth of the rectangle, in which the area is $35y^2 + 13y - 12$ **[2]**