Algebraic Expressions and Identities: Worksheet -12

1. $f(x) = 3x^4 - 2x^3 + 3x^2 + 4x + 5$ find the remainder $f(x)$ divided by (x-1)

    [   ]

      a)13   b)11   c)2   d)None

2. For what value of a is $2x^3+ax^2+11x+a+3$ is exactly divisible by (2x–1)

    [   ]

      a) -5   b) – 7   c) – 4   d) – 6

3. If (x + a) is a factor of $x^3 + ax^2 - 2x + a + 4$. Then the value of a is

    [   ]

      a) $\dfrac{-1}{3}$ b) $\dfrac{-2}{3}$ c) 1   d) $\dfrac{-4}{3}$

4. If (x + 1) is a factor to $ax^4 + bx^3 + cx^2 + dx + e$, then $a + c + e - b - d =$

    [   ]

      a) 0   b) 1   c) $\sqrt{2}$ d) – 1

5. If x + 1 is a factor of $x^4 - 5x^3 + 5x^2 + 5x - k$ then the value of k is

    [   ]

      a) 6   b) – 6   c) – 1   d) 1

6. If x – 3 is a factor of $3x^3 - x^2 + px + q$ then   [   ]

      a) p + q = 72   b) 3p + q = 72

      c) 3p + q = - 72   d) q – 3p = 72

7. For every natural number n, $(2n+3)^2 + (2n-3)^2$ is divisible by   [   ]

      a) 36   b) 18   c) 24   d) 14

8. If $f\left(\dfrac{b}{a}\right) = 0$ then the factor of f(x) is   [   ]

      a) ax + b   b) ax – b   c) bx + a   d) bx – a

9. Remainder when ax + b divides f(x) is   [   ]

   a) $f\left[\dfrac{b}{a}\right]$ b) $f\left[\dfrac{a}{b}\right]$ c) $f\left[\dfrac{-a}{b}\right]$ d) $f\left[\dfrac{-b}{a}\right]$

10. If x+1 is a factor of $ax^4 + bx^3 + cx^2 + dx + e$ then which of the

    following is true?   [   ]

    a) a + c + e = b + d   b) a + b + c = 0

    c) a + b + c + d + e = 0   d) a + b + c = d + e

11. If $x^3 - 3x^2 + 4x - 5$ is divided by (x+1) then remainder is _____[   ]

    a) 0   b) 13   c) – 13   d) none

12. If x + 1 is a factor of $ax^2 + bx + c$ then   [   ]

    a) a + b + c = 0   b) a + b = c   c) a + c = b   d) b + c = a

13. The number of real roots of the equation x + 1 = 0 is are   [   ]

    a) 1   b) 2   c) 4   d) 0