EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Factor Theorem

Grade : ICSE Grade X

1. Given $f(q)=(-5q^4-9q^3+2q^2+3q-3)$, find $f((-1))$

   (i) 1 (ii) 3 (iii) 0 (iv) -3 (v) -1

2. If the polynomial $f(x)= x^2 + 4x + k$ is exactly divisible by $(x+1)$, find k

   (i) 5 (ii) 3 (iii) 0 (iv) 4 (v) 2

3. The remainder when $(-7g^3-8g-3)$ is divided by $(g^2+2g-48)$ is

   (i) $(-371g+669)$ (ii) $(-372g+669)$ (iii) $(-370g+669)$ (iv) $(-374g+669)$ (v) $(-373g+669)$

4. Factorize $(24x^2+78xy+63y^2)$

   (i) $(6x+9y)(4x+7y)$ (ii) $(6x+9y)(4x-7y)$ (iii) $(6x-9y)(4x+7y)$ (iv) $(6x-9y)(4x-7y)$

   (v) $(6x+9y)(6x-9y)$

5. The quotient when $(-3t^3-8t^2+2t)$ is divided by $(t^2-12t+32)$ is

   (i) $(-3t-44)$ (ii) (-44) (iii) $(-4t-44)$ (iv) $(-6t-44)$ (v) $(-2t-44)$

6. The value of the polynomial $(c^4+4c^3+c^2-2c+9)$ at $c=(-4)$ is

   (i) 34 (ii) 32 (iii) 31 (iv) 33 (v) 36

7. Given $f(r)=(9r+4)$, find $f((-2))$

   (i) -13 (ii) -12 (iii) -15 (iv) -17 (v) -14

8. Which of the following polynomials has $(3x+2)$ as a factor ?

   (i) $(12x^3+8x^2-3x-2)$ (ii) $(4x^3-2x^2-10x-4)$ (iii) $(12x^3-14x^2-28x+16)$ (iv) $(4x^3+4x^2-x-1)$

   (v) $(6x^3+2x^2-20x-16)$

9. Find the quadratic polynomial which when divided by $(3x+9), (x+7), (3x-3)$ leaves remainders of (-15), $(-11), 45$ respectively.

   (i) $(3x^2+18x-21)$ (ii) $(3x^2+33x+72)$ (iii) $(2x^2+19x+24)$ (iv) $(6x^2+3x-9)$ (v) $(3x^2+30x+63)$

10. The remainder when $(3x^4+8x^3+x^2-8x+2)$ is divided by $(x^2+18x+81)$ is

    (i) $(-6831x-47464)$ (ii) $(-6829x-47464)$ (iii) $(-6833x-47464)$ (iv) $(-6828x-47464)$

    (v) $(-6830x-47464)$

11. Which of the following are true?

a) If (x - a) is a factor of f(x), then f(a) = 0
b) A linear polynomial in one variable has only one root
c) A polynomial of degree n has atmost n zeros
d) If (x + a) is a factor of f(x), then f(a) = 0
e) Zero of a polynomial and root of the polynomial are synonymous
f) Zero of a polynomial and zero polynomial are synonymous
g) Zero of a polynomial is the value of the variable for which the polynomial value is zero

(i) {a,b,c,e,g} (ii) {d,e,g} (iii) {f,b} (iv) {d,f,c} (v) {d,a}

12. $(36x^5+6x^4-60x^3+24x-6)$ divided by $(9x^3+15x^2+3x-3)$ =

(i) $(4x^2-7x+2)$ (ii) $(4x^2-6x-2)$ (iii) $(4x^2-5x+2)$ (iv) $(4x^2-6x+2)$ (v) $(4x^2+6x+2)$

13. Which of the following polynomials is not a multiple of $(3x+4)$?

(i) $(9x^2+15x+4)$ (ii) $(3x^2+7x+4)$ (iii) $(3x^2+4x+1)$ (iv) $(6x^2+17x+12)$ (v) $(6x^2+23x+20)$

14. The remainder when $(2i^2-7i)$ is divided by $(i+5)$ is

(i) 88 (ii) 82 (iii) 85 (iv) 84 (v) 86

15. The degree of the polynomial $(7v^2-8v+5)$ is

(i) 3 (ii) 4 (iii) 0 (iv) 2 (v) 1

16. Factorize $(2x^3+13x^2+6x-45)$

(i) $(x+3)(x-3)5$ (ii) $(x+3)(3x-3)(2x+5)$ (iii) $(x+3)(-3)(-2x+5)$ (iv) $(x+3)(2x-3)(x+5)$

(v) $(x+3)(4x-3)(3x+5)$

17. The remainder when $(4h^4-4h^3+4h^2+7h)$ is divided by (h^2+7h+6) is

(i) $(-1227h-1224)$ (ii) $(-1230h-1224)$ (iii) $(-1228h-1224)$ (iv) $(-1229h-1224)$

(v) $(-1231h-1224)$

18. The quotient when $(-4n^5+3n^4-4n^3-5n^2-2n+6)$ is divided by $(n-7)$ is

(i) $(-4n^4-25n^3-179n^2-1258n-8808)$ (ii) $(-n^4-25n^3-179n^2-1258n-8808)$

(iii) $(-3n^4-25n^3-179n^2-1258n-8808)$ (iv) $(-7n^4-25n^3-179n^2-1258n-8808)$

(v) $(-5n^4-25n^3-179n^2-1258n-8808)$

19. The quotient when $(-8k^4+k^3+5k^2+7k+5)$ is divided by $(k^2-5k-36)$ is

(i) $(-9k^2-39k-478)$ (ii) $(-10k^2-39k-478)$ (iii) $(-6k^2-39k-478)$ (iv) $(-7k^2-39k-478)$

(v) $(-8k^2-39k-478)$

20. $(2x^4+6x^3)\div 2x^2$

(i) $3x$ (ii) (x^2+4x) (iii) $(-x^2+3x)$ (iv) (x^2+3x) (v) (x^2-3x)

21. The degree of the polynomial $(-3b^5-9b^4+9b^3-4b^2+4b)$ is

(i) 4 (ii) 8 (iii) 2 (iv) 5 (v) 6

22. The remainder when $(-4s^2+3s-5)$ is divided by $(s+9)$ is

(i) (-355) (ii) (-354) (iii) (-356) (iv) (-357) (v) (-359)

23. The degree of the polynomial $(9j^3+3j^2+2j)$ is

(i) 1 (ii) 3 (iii) 2 (iv) 6 (v) 4

24. The quotient when $(8t-3)$ is divided by $(t-9)$ is

(i) 6 (ii) 8 (iii) 9 (iv) 11 (v) 7

25. The quotient when $9d$ is divided by (-3) is

(i) $(-4d)$ (ii) $(-2d)$ (iii) $(-5d)$ (iv) $(-3d)$ (v) $(-d)$

Assignment Key

1) (iii)	2) (ii)	3) (ii)	4) (i)	5) (i)	6) (iv)
7) (v)	8) (i)	9) (iii)	10) (v)	11) (i)	12) (iv)
13) (iii)	14) (iii)	15) (iv)	16) (iv)	17) (iv)	18) (i)
19) (v)	20) (iv)	21) (iv)	22) (iii)	23) (ii)	24) (ii)
25) (iv)					