EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Factor Theorem

Grade : ICSE Grade X

1. Factorize $(72x^2+43xy+6y^2)$

   (i) $(8x+3y)(9x-2y)$ (ii) $(8x+3y)(9x+2y)$ (iii) $(8x-3y)(9x-2y)$ (iv) $(8x-3y)(9x+2y)$

   (v) $(8x+3y)(8x-3y)$

2. Given $f(u)=(u^4+8u^3+4u^2+2u+3)$, find $f(4)$

   (i) 843 (ii) 840 (iii) 842 (iv) 844 (v) 845

3. Given $f(v)=(-6v^2+5v+2)$, find $f(5)$

   (i) -125 (ii) -121 (iii) -123 (iv) -124 (v) -122

4. Given $f(k)=(-k^2+4k+7)$, find $f((-1))$

   (i) 5 (ii) 3 (iii) 0 (iv) 1 (v) 2

5. The value of the polynomial $(7w^2+2w+4)$ at $w=0$ is

   (i) 4 (ii) 3 (iii) 7 (iv) 5 (v) 1

6. Find the value of a and b such that $4x^4 - 20x^3 + ax^2 + 52x + b$ is exactly divisible by $(2x^2-2x-4)$

   (i) -11 , 40 (ii) -12 , 41 (iii) 39 , -13 (iv) -12 , 40 (v) 41 , -11

7. The quotient when $(9r^5+3r^4-8r^3-6r^2+4r+2)$ is divided by $(r-5)$ is

   (i) $(9r^4+48r^3+232r^2+1154r+5774)$ (ii) $(6r^4+48r^3+232r^2+1154r+5774)$

   (iii) $(10r^4+48r^3+232r^2+1154r+5774)$ (iv) $(8r^4+48r^3+232r^2+1154r+5774)$

   (v) $(12r^4+48r^3+232r^2+1154r+5774)$

8. $(-36x^5-138x^4-34x^3+190x^2+54x-36)$ divided by $(6x^3+31x^2+45x+18)=$

   (i) $(-6x^2+8x+2)$ (ii) $(-6x^2+9x-2)$ (iii) $(-6x^2+8x-2)$ (iv) $(-6x^2+7x-2)$ (v) $(-6x^2-8x-2)$

9. If 5 is the zero of the polynomial $f(x)=kx^2 - 15x + 25$, find k

   (i) 5 (ii) 2 (iii) 1 (iv) 3 (v) -1

10. The quotient when $(-6y-5)$ is divided by $(y+5)$ is

    (i) (-9) (ii) (-5) (iii) (-3) (iv) (-7) (v) (-6)

11. Given $f(w)=(-2w-6)$, find $f(5)$

    (i) -16 (ii) -15 (iii) -14 (iv) -17 (v) -18

12. The remainder when $(9z^2-4z)$ is divided by $(z+9)$ is

(i) 763 (ii) 765 (iii) 764 (iv) 767 (v) 766

13. $(-6x^3+19x^2-19x+6)\div(-2x^2+5x-3)=$

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

14. If the polynomial $f(x)=3x^2+kx-15$ is exactly divisible by $(x+5)$, find k

(i) 11 (ii) 13 (iii) 12 (iv) 14 (v) 9

15. Factorize $(4x^3-6x^2-60x+112)$

(i) $(2x-7)(3x+4)(5x-4)$ (ii) $(2x-7)4(x-4)$ (iii) $(2x-7)(x+4)(2x-4)$ (iv) $(2x-7)(2x+4)(3x-4)$

(v) $(2x-7)(-2x+4)(-4)$

16. Which of the following are true?

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

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

17. The quotient when $7p$ is divided by 5 is

(i) $\frac{9}{5}p$ (ii) $\frac{7}{5}p$ (iii) p (iv) $\frac{9}{7}p$ (v) $\frac{5}{3}p$

18. Factorize $(6x^2-15x+6)$

(i) $(3x-6)(5x-1)$ (ii) $(3x-6)(x-1)$ (iii) $(3x-6)(-x-1)$ (iv) $(3x-6)(3x-1)$ (v) $(3x-6)(2x-1)$

19. $(-81x^4+81x^3+63x^2-45x-18)\div(-27x^3+21x+6)=$

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

20. The degree of the polynomial $(-2d^2+8d+4)$ is

(i) 0 (ii) 3 (iii) 2 (iv) 5 (v) 1

21. $(36x^3y^3+288x^3y^2)\div 6x^2y=$

(i) $(48xy^2z+6xy^2)$ (ii) $(6x^2y^3+48xy)$ (iii) $(6x^2y^4+48xy)$ (iv) $(6xy^2+48y^2)$ (v) $(6xy^2+48xy)$

22. Which of the following are true ?

a) Division of a polynomial with another polynomial stops when the degree of the remainder equals the degree of the divisor
b) If the degree of p(x) is less then the degree of d(x), we should not divide p(x) with d(x)
c) If p(x) is divided by (x - a), the remainder is p(a)
d) If p(a) = 0, then (x + a) perfectly divides p(x)

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

23. The quotient when $(-7m^3-3m^2+1)$ is divided by $(m^2-10m+21)$ is

(i) $(-6m-73)$ (ii) $(-9m-73)$ (iii) $(-7m-73)$ (iv) $(-8m-73)$ (v) $(-5m-73)$

24. $(10x^4+29x^3+10x^2)\div(2x^2+5x)$

(i) $(5x^2+2x)$ (ii) $(-5x^2+2x)$ (iii) $(5x^2-2x)$ (iv) $(5x^2+3x)$ (v) $(4x^2+2x)$

25. The degree of the polynomial $(4e-1)$ is

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

Assignment Key

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