EduSahara™ Assignment

Name : Factorisation by Grouping

Chapter : Factorisation

Grade : ICSE Grade IX

1. Factorize $(3x^2-10x-25)$

   (i) $(x-5)(4x+5)$ (ii) $(x-5)5$ (iii) $(x-5)(3x+5)$ (iv) $(x-5)(2x+5)$ (v) $(x-5)(6x+5)$

2. Factorize $(2x^3+4x^2-18x-36)$

   (i) $(x+3)(4x-6)(3x+2)$ (ii) $(x+3)(x-6)2$ (iii) $(x+3)(2x-6)(x+2)$ (iv) $(x+3)(3x-6)(2x+2)$

   (v) $(x+3)(-6)(-x+2)$

3. Factorize $(x^4-79x^2+66x+432)$

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

   (iv) $(x+2)(2x+9)(2x-8)(2x-3)$ (v) $(x+2)(4x+9)(3x-8)(3x-3)$

4. Factorize $(x^2+2xa+4x+a^2+4a-45)$

   (i) $(x-a+9)(x+a+5)$ (ii) $(x+a+9)(x-a-5)$ (iii) $(x+a-5)(x-a+9)$ (iv) $(x+a+9)(x+a-5)$

   (v) $(x-a-5)(x+a-9)$

5. Factorize $(x^3+3x^2a+3xa^2-x+a^3-a)$

   (i) $(x-a)(x-a-1)(x+a+1)$ (ii) $(x+a)(x-a-1)(x+a+1)$ (iii) $(x-a)(x+a-1)(x-a+1)$

   (iv) $(x+a)(x+a-1)(x-a+1)$ (v) $(x+a)(x+a-1)(x+a+1)$

6. Factorize $(4x^2+23xy-35y^2)$

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

   (v) $(x+7y)(4x+5y)$

7. Factorize $(-24x^3+8x^2y+10xy^2-4y^3)$

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

   (iv) $(-2x-y)(3x+2y)(4x-2y)$ (v) $(-2x+y)(3x+2y)(4x+2y)$

8. Which of the following is a factor of $23x^4y^5z^2$?

   (i) $23x^2y^2z^3$ (ii) x^5y^2z (iii) $23x^2y^6z$ (iv) $23x^2y^2z$ (v) $23x^4y^2z^3$

9. Which of the following is not a factor of $20x^3y^4z^4$?

   (i) $4x^2y^4z^4$ (ii) $4x^3y^3z^4$ (iii) $4x^4y^5z^4$ (iv) $4xz$ (v) $4x^3y^4z^3$

10. Which of the following is a factor of $(11x^2+y^3z^4)$?

(i) y^3z^4 (ii) $11y^3$ (iii) no factors (iv) $11x^2$ (v) $11xz^2$

11. Which of the following is an irreducible factor of $49x^4y^5z$?

(i) x^4y (ii) z (iii) y^3z (iv) x^4y^3z (v) xz

12. Which of the following is not an irreducible factor of (x^2y+xy^2+xy)?

(i) y (ii) $(x+y+1)$ (iii) x (iv) xy

13. Factorize $(x^2+10x+16)$

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

14. In which of the cases, $g(x)$ is a factor of $f(x)$?

(i) $f(x)=(3x^3+4x^2-27x+20), g(x)=(-x+4)$ (ii) $f(x)=(x^3+2x^2-31x+28), g(x)=(x+4)$

(iii) $f(x)=(x^3-x^2-16x+16), g(x)=(2x+7)$ (iv) $f(x)=(3x^3+4x^2-99x+140), g(x)=(x+7)$

(v) $f(x)=(-2x^3-13x^2-13x+28), g(x)=(-3x+5)$

15. Factorize (j^4-8j^2+16)

(i) $(j^2+4j-4)(j^2-4j+4)$ (ii) $(j^2+4j+4)(j^2-4j-4)$ (iii) $(j^2+4j+4)(j^2-4j+4)$

(iv) $(j^2+4j-4)(j^2-4j-4)$ (v) $(j^2+4j+4)(j^2+4j-4)$

16. Factorize (j^4-48j^2-1024)

(i) $(j-8)(j+8)(j+8)$ (ii) $(j-8)(j+8)(j^2+16)$ (iii) $(j^2+16)(j^2-16)$ (iv) $(j-8)(j+8)(j^2-16)$

(v) $(j-8)(j-8)(j+8)$

17. Factorize $a^2-b^2-c^2-2bc$

(i) $(a+b+c)(a-b+c)$ (ii) $(a-b-c)(a+b-c)$ (iii) $(a-b-c)(a+b+c)$ (iv) $(a+b+c)(a+b-c)$

(v) $(a-b-c)(a-b+c)$

18. Factorize $(x^4+40000)$

(i) $(x^2-20x+200)(x^2+20x-200)$ (ii) $(x^2+20x+200)(x^2+20x-200)$

(iii) $(x^2-20x+200)(x^2-20x-200)$ (iv) $(x^2+20x+200)(x^2-20x-200)$

(v) $(x^2-20x+200)(x^2+20x+200)$

19. Factorize $(8x^4+8192)$

(i) $8(x^2-8x+32)(x^2+8x-32)$ (ii) $8(x^2+8x+32)(x^2-8x-32)$ (iii) $8(x^2-8x+32)(x^2+8x+32)$

(iv) $8(x^2+8x+32)(x^2+8x-32)$ (v) $8(x^2-8x+32)(x^2-8x-32)$

20. Factorize (x^4+x^2+1)

(i) $(x^2+x+1)(x^2+x-1)$ (ii) $(x^2-x+1)(x^2+x-1)$ (iii) $(x^2-x+1)(x^2+x+1)$ (iv) $(x^2-x+1)(x^2-x-1)$

(v) $(x^2+x+1)(x^2-x-1)$

21. Factorize $(x^4+x^2y^2+y^4)$

(i) $(x^2-xy+y^2)(x^2+xy+y^2)$ (ii) $(x^2-xy+y^2)(x^2-xy-y^2)$ (iii) $(x^2+xy+y^2)(x^2-xy-y^2)$

(iv) $(x^2+xy+y^2)(x^2+xy-y^2)$ (v) $(x^2-xy+y^2)(x^2+xy-y^2)$

22. Factorize $(x^3-3x^2+3x-65)$

(i) $(x-5)(x^2-2x+13)$ (ii) $(x+5)(x^2+2x+13)$ (iii) $(x-5)(x^2+2x+13)$ (iv) $(x+5)(x^2-2x+13)$

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

23. Factorize $(x^3+6x^2+12x+35)$

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

(v) $(x+5)(x^2-x+7)$

24. Factorize $(x^4+3x^3-7x^2-27x-18)$

(i) $(x+1)(x+3)(x-2)(x-1)$ (ii) $(x+1)(x+3)(x+2)(x-2)$ (iii) $(x+1)(x+3)(x+2)(x-3)$

(iv) $(x+1)(x+3)(x-3)(x-2)$ (v) $(x+1)(x+3)(x+2)(x-1)$

25. Factorize $(5x^2+4xy-y^2)$

(i) $(x-y)(5x+y)$ (ii) $(x-y)(5x-y)$ (iii) $(x+y)(x+y)$ (iv) $(x+y)(5x+y)$ (v) $(x+y)(5x-y)$

26. Factorize (x^6+7x^3-8)

(i) $(x-1)(x^2+x+1)(x-2)(x^2-2x+4)$ (ii) $(x-1)(x^2+x+1)(x+2)(x^2-2x+4)$

(iii) $(x+1)(x^2+x+1)(x+2)(x^2-2x+4)$ (iv) $(x-1)(x^2-2x+4)(x+2)(x^2-2x+4)$

(v) $(x+1)(x^2+x+1)(x-2)(x^2-2x+4)$

27. Factorize $(48xy+18y^2)$

(i) $6y(8x-3y)$ (ii) $6y(-8x-3y)$ (iii) $6x(8x-3y)$ (iv) $6x(8x+3y)$ (v) $6y(8x+3y)$

28. Factorize $(40a^2b+16ab^2)$

(i) $8ab(-5a-2b)$ (ii) $8ab(5a+2b)$ (iii) $8b(5a-2b)$ (iv) $8a(5a+2b)$ (v) $8ab(5a-2b)$

29. Factorize (x^4+5x^2+6)

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

Assignment Key

1) (iii)	2) (iii)	3) (ii)	4) (iv)	5) (v)	6) (i)
7) (i)	8) (iv)	9) (iii)	10) (iii)	11) (ii)	12) (iv)
13) (ii)	14) (iv)	15) (iii)	16) (ii)	17) (iii)	18) (v)
19) (iii)	20) (iii)	21) (i)	22) (iii)	23) (ii)	24) (iii)
25) (v)	26) (ii)	27) (v)	28) (ii)	29) (ii)	