



1. Factorize $(6x^2 - 13x + 5)$

- (i) $(3x-5)(2x-1)$ (ii) $(3x-5)(3x-1)$ (iii) $(3x-5)(x-1)$ (iv) $(3x-5)(4x-1)$ (v) $(3x-5)(-1)$

2. Factorize $(2x^3 - 24x + 32)$

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

3. Factorize $(x^4 - 13x^3 + 32x^2 + 52x - 144)$

- (i) $(x+2)(3x-9)(4x-2)(4x-4)$ (ii) $(x+2)(-x-9)(-2x-2)(-x-4)$ (iii) $(x+2)(-9)(-2)(-4)$
(iv) $(x+2)(2x-9)(2x-2)(2x-4)$ (v) $(x+2)(x-9)(x-2)(x-4)$

4. Factorize $(a^2 - 10ab + 25b^2)$

- (i) $(-a+3b)(-a+3b)$ (ii) $(-2a+5b)(-2a+5b)$ (iii) $(-a+5b)(-a+5b)$ (iv) $5b5b$
(v) $(-a+7b)(-a+7b)$

5. Factorize $(25a^2 - 40ab + 16b^2)$

- (i) $(-6a+4b)(-6a+4b)$ (ii) $(-4a+4b)(-4a+4b)$ (iii) $(-5a+2b)(-5a+b)$ (iv) $(-5a+7b)(-5a+6b)$
(v) $(-5a+4b)(-5a+4b)$

6. Factorize $(16a^2 - b^2)$

- (i) $(-5a-b)(-5a+b)$ (ii) $(-3a-b)(-3a+b)$ (iii) $(-4a-4b)(-4a-2b)$ (iv) $(-4a+b)(-4a+4b)$
(v) $(-4a-b)(-4a+b)$

7. Factorize $(x^2 + 2xa + 2x + a^2 + 2a - 48)$

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

8. 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) $(x+a)(x+a-1)(x-a+1)$

9. Factorize $(18x^2 + 12xy - 30y^2)$

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

10. Factorize $(9x+5y)^2 + 2(9x+5y)(6x+3y) + (6x+3y)^2$

- (i) $(15x+8y)^2$ (ii) $(16x+8y)^2$ (iii) $(-3x-y)^2$ (iv) $(9x+5y)(6x+3y)$ (v) $(3x+2y)^2$

11. Factorize $(6x+7y)^2 - 2(6x+7y)(4x+3y) + (4x+3y)^2$

- (i) $(2x+4y)^2$ (ii) $(3x+4y)^2$ (iii) $(6x+7y)(4x+3y)$ (iv) $(-x-4y)^2$ (v) $(10x+10y)^2$

12. Factorize $a^2b^2 - b^2c^2$

- (i) $(ab+bc)(ac+bc)$ (ii) $(ac+bc)(ac-bc)$ (iii) $(ab+bc)(ab-bc)$ (iv) $(ab+bc)(ab+bc)$
(v) $(ab-bc)(ab-bc)$

13. Factorize $49a^3 - 81a$

- (i) $(7a-9)(7a^2+9)a$ (ii) $(7a+9)(7a-9)a$ (iii) $(7a+9)(9a-7)a$ (iv) $(7a^2+9)(9a-7)a$
(v) $(7a+9)(7a^2+9)a$

14. Factorize $(x^2 - 36)$

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

15. Factorize $(36x^2 - 16)$

- (i) $(6x-8)(6x+2)$ (ii) $(6x+4)(6x+4)$ (iii) $(6x-4)(6x-4)$ (iv) $(6x+8)(6x-2)$ (v) $(6x+4)(6x-4)$

16. Factorize $(64x^2 - 64y^2)$

- (i) $(8x+16y)(8x-4y)$ (ii) $(8x-16y)(8x+4y)$ (iii) $(8x+8y)(8x+8y)$ (iv) $(8x-8y)(8x-8y)$
(v) $(8x+8y)(8x-8y)$

17. Factorize $(32x^3 + 112x^2y + 120xy^2 + 36y^3)$

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

18. Factorize and divide $(100x^4 - 500x^2 + 400) \div (10x^2 + 10x - 20)$

- (i) $(13x^2 - 10x - 20)$ (ii) $(9x^2 - 10x - 20)$ (iii) $(7x^2 - 10x - 20)$ (iv) $(11x^2 - 10x - 20)$
(v) $(10x^2 - 10x - 20)$

19. Factorize and divide $(-3x^4 - 13x^3 + 17x^2 + 37x + 10) \div (-x^2 + x + 2)$

- (i) $(3x^2 + 16x + 5)$ (ii) $(-3x^2 - 4x - 1)$ (iii) $(3x^2 + 14x - 5)$ (iv) $(3x^2 - 14x - 5)$ (v) $(3x^2 - 16x + 5)$

20. Which of the following is a factor of $36x^3y^3z$?

- (i) $3x^3y^2z$ (ii) x^4y^2z (iii) $3x^3y^4z$ (iv) $3x^3y^2z^2$

21. Which of the following is not a factor of $47x^5yz$?

- (i) xy (ii) x^5z (iii) x^5y (iv) x^4yz (v) x^6y^2z

22. Which of the following is a factor of $(2x^3 + yz)$?

- (i) $2x^3z$ (ii) $2x^3$ (iii) no factors (iv) yz (v) $2y$

23. Which of the following is an irreducible factor of $25x^4y^4z^3$?

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

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

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

25. Factorize $(x^2 + 11x + 18)$

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

26. Factorize $(a+b)^2 - c^2$

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

27. 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) $(a+b+c)(a-b+c)$

28. Factorize $a^2c^2 - b^2c^2 - a^2d^2 + b^2d^2$

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

29. Factorize $(a^6 - b^6)$

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

30. Factorize $(a-b)^3 + (b-c)^3 + (c-a)^3$

- (i) $3(a-b)(b-c)(c-a)$ (ii) $3(a-b)(b-c)(c+a)$ (iii) $3(a-b)(b+c)(c+a)$ (iv) $3(a+b)(b-c)(c-a)$
(v) $3(a-b)(b+c)(c-a)$

31. Factorize $(4a-b)^3 + (b-c)^3 + (c-4a)^3$

- (i) $3(4a-b)(b-c)(c-4a)$ (ii) $3(4a-b)(b+c)(c-4a)$ (iii) $3(4a+b)(b-c)(c-4a)$
(iv) $3(4a-b)(b-c)(c+4a)$ (v) $3(4a-b)(b+c)(c+4a)$

32. Factorize $(3a-4b)^3 - (a-2b)^3 - (2a-2b)^3$

(i) $3(a+2b)(2a+2b)(-a)$ (ii) $3(a-2b)(2a+2b)(3a-4b)$ (iii) $3(a+2b)(2a-2b)(3a-4b)$

(iv) $3(a-2b)(2a-2b)(3a-4b)$ (v) $3(a+2b)(2a+2b)(3a-4b)$

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

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

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

34. Factorize $(12x^2-10xy-2y^2)$

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

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

35. Factorize $(48xy+72y^2)$

(i) $8x(6x+9y)$ (ii) $8x(6x-9y)$ (iii) $8y(-6x-9y)$ (iv) $8y(6x-9y)$ (v) $8y(6x+9y)$

36. Factorize $(63a^2b+45ab^2)$

(i) $9ab(-7a-5b)$ (ii) $9a(7a+5b)$ (iii) $9ab(7a-5b)$ (iv) $9ab(7a+5b)$ (v) $9b(7a-5b)$

37. Factorize $(ax+by)^2 - (ax-by)^2$

(i) $2(ax)^2(by)^2$ (ii) $4axby$ (iii) $4(ax)^2(by)^2$ (iv) $2axby$

Assignment Key

1) (i)	2) (ii)	3) (v)	4) (iii)	5) (v)	6) (v)
7) (iv)	8) (ii)	9) (iv)	10) (i)	11) (i)	12) (iii)
13) (ii)	14) (iv)	15) (v)	16) (v)	17) (ii)	18) (v)
19) (i)	20) (i)	21) (v)	22) (iii)	23) (ii)	24) (ii)
25) (ii)	26) (iv)	27) (i)	28) (i)	29) (i)	30) (i)
31) (i)	32) (iv)	33) (iv)	34) (iii)	35) (v)	36) (iv)
37) (ii)					