



1. Factorize $(9x^2 - 42x + 48)$

- (i) $(3x-8)(-6)$ (ii) $(3x-8)(2x-6)$ (iii) $(3x-8)(3x-6)$ (iv) $(3x-8)(5x-6)$ (v) $(3x-8)(4x-6)$

2. Factorize $(4x^3 - 48x^2 + 143x - 120)$

- (i) $(x-8)(-x-5)(-3)$ (ii) $(x-8)(3x-5)(3x-3)$ (iii) $(x-8)(x-5)(x-3)$ (iv) $(x-8)(2x-5)(2x-3)$
(v) $(x-8)(4x-5)(5x-3)$

3. Factorize $(x^4 - 9x^3 + 25x^2 - 27x + 10)$

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

4. Factorize $(16a^2 - 24ab + 9b^2)$

- (i) $(-4a)(-4a+b)$ (ii) $(-5a+3b)(-5a+3b)$ (iii) $(-3a+3b)(-3a+3b)$ (iv) $(-4a+3b)(-4a+3b)$
(v) $(-4a+5b)(-4a+6b)$

5. Factorize $(4a^2 - 12ab + 9b^2)$

- (i) $(a-3b)(a-3b)$ (ii) $(2a-3b)(2a-3b)$ (iii) $(3a-3b)(3a-3b)$ (iv) $(2a-b)2a$ (v) $(2a-5b)(2a-6b)$

6. Factorize $(9a^2 - 16b^2)$

- (i) $(3a+b)(3a-7b)$ (ii) $(3a+4b)(3a-4b)$ (iii) $(2a+4b)(2a-4b)$ (iv) $(4a+4b)(4a-4b)$
(v) $(3a+7b)(3a-2b)$

7. Factorize $(x^2 + 2xa - 3x + a^2 - 3a - 54)$

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

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 $(24x^2 + 78xy + 18y^2)$

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

10. Factorize $(4x+6y)^2 + 2(4x+6y)(9x+5y) + (9x+5y)^2$

- (i) $(13x+11y)^2$ (ii) $(4x+6y)(9x+5y)$ (iii) $(-5x+y)^2$ (iv) $(14x+11y)^2$ (v) $5x^2$

11. Factorize $(8x+4y)^2 - 2(8x+4y)(6x+3y) + (6x+3y)^2$

- (i) $(-x-y)^2$ (ii) $(14x+7y)^2$ (iii) $(2x+y)^2$ (iv) $(8x+4y)(6x+3y)$ (v) $(3x+y)^2$

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

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

13. Factorize $4a^3 - 9a$

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

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

- (i) $(x-6)(x-6)$ (ii) $(x+6)(x-6)$ (iii) $(x+6)(x+6)$ (iv) $(x+2)(x-18)$ (v) $(x-2)(x+18)$

15. Factorize $(4x^2 - 100)$

- (i) $(2x-10)(2x-10)$ (ii) $(2x-2)(2x+50)$ (iii) $(2x+2)(2x-50)$ (iv) $(2x+10)(2x-10)$
(v) $(2x+10)(2x+10)$

16. Factorize $(100x^2 - 81y^2)$

- (i) $(10x-9y)(10x-9y)$ (ii) $(10x-3y)(10x+27y)$ (iii) $(10x+9y)(10x-9y)$ (iv) $(10x+3y)(10x-27y)$
(v) $(10x+9y)(10x+9y)$

17. Factorize $(x^3 - 7x^2y + 16xy^2 - 12y^3)$

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

18. Factorize and divide $(225x^4 - 549x^2 + 324) \div (15x^2 + 33x + 18)$

- (i) $(14x^2 - 33x + 18)$ (ii) $(17x^2 - 33x + 18)$ (iii) $(13x^2 - 33x + 18)$ (iv) $(15x^2 - 33x + 18)$
(v) $(16x^2 - 33x + 18)$

19. Factorize and divide $(6x^4 + 66x^3 + 156x^2 - 264x - 720) \div (-x^2 - 11x - 30)$

- (i) $(-6x^2 + 24)$ (ii) $(3x^2 + 21x + 30)$ (iii) $(-6x^2 - 24x - 24)$ (iv) $(-6x^2 + 24x - 24)$

20. Which of the following is a factor of $31x^2y^4z^5$?

- (i) $31y^2z^6$ (ii) $x^3y^2z^4$ (iii) $31y^2z^4$ (iv) $31x^2y^2z^6$ (v) $31y^5z^4$

21. Which of the following is not a factor of $15x^5yz^5$?

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

22. Which of the following is a factor of $(10x^5 + y^3z^3)$?

- (i) y^3z^3 (ii) $2x^4z$ (iii) no factors (iv) $2y$ (v) $10x^5$

23. Which of the following is an irreducible factor of $44xy^3z^2$?

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

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

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

25. Factorize $(x^2 + 9x + 20)$

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

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

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 $(4a-4b)^3 + (4b-6c)^3 + (6c-4a)^3$

- (i) $3(4a+4b)(4b-6c)(6c-4a)$ (ii) $3(4a-4b)(4b+6c)(6c+4a)$ (iii) $3(4a-4b)(4b-6c)(6c+4a)$
(iv) $3(4a-4b)(4b-6c)(6c-4a)$ (v) $3(4a-4b)(4b+6c)(6c-4a)$

32. Factorize $(6a-11b)^3 - (a-5b)^3 - (5a-6b)^3$

- (i) $3(a+5b)(5a-6b)(6a-11b)$ (ii) $3(a+5b)(5a+6b)(6a-11b)$ (iii) $3(a+5b)(5a+6b)(-4a+b)$
(iv) $3(a-5b)(5a+6b)(6a-11b)$ (v) $3(a-5b)(5a-6b)(6a-11b)$

33. Factorize $(x^4 - 10x^2 + 9)$

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

34. Factorize $(12x^2 - 20xy - 25y^2)$

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

35. Factorize $(28xy + 8y^2)$

- (i) $4y(7x+2y)$ (ii) $4y(7x-2y)$ (iii) $4x(7x-2y)$ (iv) $4x(7x+2y)$ (v) $4y(-7x-2y)$

36. Factorize $(28a^2b + 63ab^2)$

- (i) $7b(4a-9b)$ (ii) $7ab(-4a-9b)$ (iii) $7ab(4a+9b)$ (iv) $7a(4a+9b)$ (v) $7ab(4a-9b)$

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

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

Assignment Key

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