



1. Factorize $(4x^2 + 32x + 63)$

- (i)
- $(2x+7)(3x+9)$
- (ii)
- $(2x+7)(5x+9)$
- (iii)
- $(2x+7)(2x+9)$
- (iv)
- $(2x+7)(x+9)$
- (v)
- $(2x+7)(-x+9)$

2. Factorize $(2x^3 - 16x^2 + 34x - 20)$

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

3. Factorize $(x^4 + 7x^3 - 13x^2 - 175x - 300)$

- (i)
- $(x+3)(x-5)(x+4)(x+5)$
- (ii)
- $(x+3)(-2x-5)(-2x+4)(-x+5)$
- (iii)
- $(x+3)(2x-5)(2x+4)(2x+5)$
-
- (iv)
- $(x+3)(-5)45$
- (v)
- $(x+3)(4x-5)(4x+4)(4x+5)$

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

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

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

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

6. Factorize $(4a^2 - 4b^2)$

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

7. Factorize $(x^2 + 2xa - 4x + a^2 - 4a - 12)$

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

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 $(32x^2 + 68xy - 9y^2)$

- (i)
- $(4x-9y)(8x+y)$
- (ii)
- $(4x+9y)(8x+y)$
- (iii)
- $(4x-9y)(8x-y)$
- (iv)
- $(4x+9y)(4x-9y)$
-
- (v)
- $(4x+9y)(8x-y)$

10. Factorize $(5x+4y)^2 + 2(5x+4y)(3x+9y) + (3x+9y)^2$

- (i) $(2x-5y)^2$ (ii) $(8x+13y)^2$ (iii) $(5x+4y)(3x+9y)$ (iv) $(9x+13y)^2$ (v) $(-2x+6y)^2$

11. Factorize $(4x+8y)^2 - 2(4x+8y)(7x+9y) + (7x+9y)^2$

- (i) $(-3x-y)^2$ (ii) $(4x+8y)(7x+9y)$ (iii) $(4x+y)^2$ (iv) $(-2x-y)^2$ (v) $(11x+17y)^2$

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

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

13. Factorize $25a^3 - 36a$

- (i) $(5a+6)(5a^2+6)a$ (ii) $(5a-6)(5a^2+6)a$ (iii) $(5a^2+6)(6a-5)a$ (iv) $(5a+6)(5a-6)a$
(v) $(5a+6)(6a-5)a$

14. Factorize (x^2-36)

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

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

- (i) $(10x-20)(10x+5)$ (ii) $(10x-10)(10x-10)$ (iii) $(10x+20)(10x-5)$ (iv) $(10x+10)(10x+10)$
(v) $(10x+10)(10x-10)$

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

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

17. Factorize $(-12x^3+25x^2y-16xy^2+3y^3)$

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

18. Factorize and divide $(400x^4-116x^2+4) \div (20x^2-14x+2)$

- (i) $(18x^2+14x+2)$ (ii) $(22x^2+14x+2)$ (iii) $(20x^2+14x+2)$ (iv) $(21x^2+14x+2)$ (v) $(19x^2+14x+2)$

19. Factorize and divide $(9x^4-66x^3+63x^2+66x-72) \div (-x^2+7x-6)$

- (i) $(-9x^2-21x-12)$ (ii) $(-9x^2+3x+12)$ (iii) $(-9x^2-3x+12)$ (iv) $(-9x^2+21x-12)$
(v) $(3x^2-22x+24)$

20. Which of the following is a factor of $33x^4yz$?

- (i) x^5yz (ii) $33yz^2$ (iii) $33x^4yz^2$ (iv) $33y^2z$ (v) $33yz$

21. Which of the following is not a factor of $45x^4yz^3$?

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

22. Which of the following is a factor of $(7x^4+y^5z^2)$?

- (i) x^4z (ii) y^5z^2 (iii) $7x^4$ (iv) y^5 (v) no factors

23. Which of the following is an irreducible factor of $9xy^3z$?

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

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

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

25. Factorize $(x^2+10x+24)$

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

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

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

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

32. Factorize $(10a-4b)^3 - (4a-3b)^3 - (6a-b)^3$

- (i) $3(4a+3b)(6a+b)(-2a-2b)$ (ii) $3(4a-3b)(6a+b)(10a-4b)$ (iii) $3(4a-3b)(6a-b)(10a-4b)$
(iv) $3(4a+3b)(6a-b)(10a-4b)$ (v) $3(4a+3b)(6a+b)(10a-4b)$

33. Factorize $(x^4+x^3-11x^2-9x+18)$

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

34. Factorize $(10x^2-7xy-12y^2)$

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

35. Factorize $(45xy+54y^2)$

- (i) $9x(5x-6y)$ (ii) $9y(5x+6y)$ (iii) $9y(-5x-6y)$ (iv) $9x(5x+6y)$ (v) $9y(5x-6y)$

36. Factorize $(24a^2b+32ab^2)$

- (i) $4b(6a-8b)$ (ii) $4ab(-6a-8b)$ (iii) $4ab(6a+8b)$ (iv) $4ab(6a-8b)$ (v) $4a(6a+8b)$

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

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

Assignment Key

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