



1. Factorize $(x^2 + 4x + 3)$

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

2. Factorize $(81x^2 - 81)$

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

3. Factorize $(x^2 + 2xa + 3x + a^2 + 3a - 40)$

- (i) $(x-a+8)(x+a+5)$ (ii) $(x+a-5)(x-a+8)$ (iii) $(x+a+8)(x+a-5)$ (iv) $(x-a-5)(x+a-8)$
(v) $(x+a+8)(x-a-5)$

4. Factorize $(2x+3y)^2 - 2(2x+3y)(8x+5y) + (8x+5y)^2$

- (i) $(10x+8y)^2$ (ii) $(-5x-2y)^2$ (iii) $(-6x-2y)^2$ (iv) $(7x+2y)^2$ (v) $(2x+3y)(8x+5y)$

5. Factorize $(15x^2 + 12xy - 36y^2)$

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

6. Factorize $(25a^2 + 50ab - 20ac + 25b^2 - 20bc + 4c^2)$

- (i) $(-6a-5b+2c)(-6a-5b+2c)$ (ii) $(-5a-3b+2c)(-5a-3b+2c)$ (iii) $(-4a-5b+2c)(-4a-5b+2c)$
(iv) $(-5a-7b+2c)(-5a-8b+2c)$ (v) $(-5a-5b+2c)(-5a-5b+2c)$

7. Factorize $(x^2 - 64)$

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

8. Find the H.C.F. of $28x^3y$ and $12x^2y^2$

- (i) $4x^5y$ (ii) $4x^2y^3$ (iii) $4x^3y$ (iv) $4x^2y$ (v) $84x^3y^2$

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

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

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

11. Find the number of numbers between 14^2 and 15^2

- (i) 31 (ii) 29 (iii) 28 (iv) 25 (v) 27

12. Find the H.C.F. of $(x^2 - 7x + 6)$ and $(x^2 - 9x + 18)$

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

13. Which of the following is a factor of $30x^5yz^3$?

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

14. Factorize $(a^2 - b^2)$

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

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

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

16. Factorize $(x^4 - 9x^3 - 40x^2 + 588x - 1440)$

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

17. Which of the following are true?

- a) Degree of zero polynomial is zero
b) A binomial may have degree 3
c) Every polynomial is a binomial
d) A binomial has two and only two terms
e) πr^2 is a monomial

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

18. Factorize $(q^4 - 256)$

- (i) $(q + 4)(q - 4)(q - 4)$ (ii) $(q^2 + 16)(q^2 - 8)$ (iii) $(q + 4)(q - 4)(q^2 - 8)$ (iv) $(q + 4)(q + 4)(q - 4)$
(v) $(q + 4)(q - 4)(q^2 + 16)$

19. Find the H.C.F. of $132x^2y^3z$ and $36x^2y^3z^2$

- (i) $12x^3y^3z$ (ii) $12x^2y^5z$ (iii) $12x^2y^3z$ (iv) $396x^2y^3z^2$ (v) $12x^2y^3z^3$

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

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

21. Which of the following gives the H.C.F of two or more polynomials?

- (i) (H.C.F. of numerical coefficients) × (Each common factor raised to the highest power)
- (ii) (Product of numerical coefficients) × (Each common factor raised to the highest power)
- (iii) (Product of numerical coefficients) × (Each common factor raised to the lowest power)
- (iv) (H.C.F. of numerical coefficients) × (Each common factor raised to the lowest power)

22. Factorize $(6x^2 + 16x + 8)$

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

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

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

24. Factorize $(2x^3 + 24x^2 + 72x + 64)$

- (i) $(2x+4)(-2x+8)(-2x+2)$ (ii) $(2x+4)82$ (iii) $(2x+4)(x+8)(x+2)$ (iv) $(2x+4)(2x+8)(2x+2)$
- (v) $(2x+4)(3x+8)(3x+2)$

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

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

Assignment Key

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