

TB(3A) Ch. 1 More about Factorization of Polynomials
Multiple Choice Questions

1. [14 – 15 Mid-year Exam]

Factorize $11y^2 - 13y + 2$.

- A. $(11y + 2)(y + 1)$
- B. $(11y + 2)(y - 1)$
- C. $(11y - 2)(y + 1)$
- D. $(11y - 2)(y - 1)$

2. [14 – 15 Mid-year Exam]

Which of the following is/are correct?

- I. $a^2 - b^2 = (a - b)(a + b)$
 - II. $27a^3 + 8b^3 = (3a + 2b)(9a^2 + 6ab + 4b^2)$
 - III. $a^3 - b^3 = (a - b)^3$
- A. I only
 - B. II only
 - C. I and II only
 - D. II and III only

3. [14 – 15 Mid-year Exam]

Factorize $(x + 1)^3 - (x - 1)^3$.

- A. $8x$
- B. $8x^2$
- C. $2(3x^2 + 1)$
- D. $2(3x^2 + 3)$

4. [14 - 15 S.2 Final Exam #1]

Factorize $4a^2 + 4a - 15$.

- A. $(2a + 5)(2a - 3)$
- B. $(2a - 5)(2a + 3)$
- C. $(4a + 5)(a - 3)$
- D. $(4a - 5)(a + 3)$

5. [14 - 15 S.2 Final Exam #17]

$-250 + 2m^3 =$

- A. $2(-5 + m)(25 - 5m + m^2)$.
- B. $2(-5 + m)(25 + 5m + m^2)$.
- C. $-2(5 + m)(25 - 5m + m^2)$.
- D. $-2(5 + m)(25 + 5m + m^2)$.

6. [15-16 Mid-year Exam #3]

Factorize $-x^2 + 10x - 25$.

- A. $-(x-5)^2$
- B. $-(x+5)^2$
- C. $(x-5)^2$
- D. $(x+5)^2$

7. [15-16 Mid-year Exam #4]

Factorize $3x^2 - xy - 10y^2$.

- A. $(x-2)(x+\frac{5}{3})$
- B. $(x-2)(x+\frac{5y}{3})$
- C. $(x-2)(3x+5)$
- D. $(x-2y)(3x+5y)$

8. [15-16 Mid-year Exam #5]

Factorize $27x^3 - 125y^3$.

- A. $(3x-5y)^3$
- B. $(3x+5y)^3$
- C. $(3x-5y)(9x^2 + 15xy + 25y^2)$
- D. $(3x-5y)(9x^2 + 30xy + 25y^2)$

9. [15-16 Mid-year Exam #11]

Factorize $(x-y)^3 - (y-x)^2$.

- A. $(x-y)$
- B. $(y-x)^2$
- C. $(x-y)^2(x-y+1)$
- D. $(x-y)^2(x-y-1)$

10. [15-16 Mid-year Exam #12]

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

- A. $6x^6$
- B. $8x^6$

- C. $2x^2(x^4 + 3)$
- D. $2x^2(3x^4 + 1)$

11. [15-16 Final Exam, #3]

Factorize $16x^3 - 2y^3$.

- A. $2(2x - y)(4x^2 + 4xy + y^2)$
- B. $2(2x + y)(4x^2 - 4xy + y^2)$
- C. $2(2x + y)(4x^2 + 2xy + y^2)$
- D. $2(2x - y)(4x^2 + 2xy + y^2)$

12. [15-16 Final Exam, #16]

Which of the following are factors of $x^6 - 64$?

- I. $x - 2$
- II. $x^3 + 8$
- III. $x^2 - 4x + 4$
- IV. $x^4 + 4x^2 + 16$
- A. I and II only
- B. II and III only
- C. I, II and III only
- D. I, II and IV only

13. [16-17 S2 Mid-Year Exam, #4]

Factorize $-5x^2 - 11xy + 12y^2$.

- A. $(-x + 6y)(5x + 2y)$
- B. $(x + y)(-5x + 12y)$
- C. $(x + 3y)(-5x + 4y)$
- D. $(x + 4y)(-5x + 3y)$

14. [16-17 S2 Mid-Year Exam, #14]

Factorize $3a^2 - 12a^4$ completely.

- A. $3a^2(1 - 2a)^2$
- B. $3a^2(1 - 2a^2)^2$
- C. $3a^2(1 + 2a)(1 - 2a)$
- D. $3a^2(1 + 2a^2)(1 - 2a^2)$

15. [16-17 S2 Mid-Year Exam, #15]

Factorize $ab - bc - b^2 + ac$.

- A. $(a - b)(b - c)$
- B. $(a - b)(b + c)$

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

D. $(a+b)(b+c)$

16. [16-17 S2 Mid-Year Exam, #16]

Which of the following have $3x-4$ as a factor?

I. $6x^2 - 23x + 20$

II. $9x^2 + 16$

III. $27x^3 - 64$

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

17. [16-17 F.2 Mid-year #18]

Simplify $\frac{a^2 - b^2}{(a-b)^2} \div \frac{(a+b)^2}{a^3 + b^3}$.

A. $\frac{a^2 - ab + b^2}{a-b}$

B. $a+b$

C. $\frac{(a+b)^2}{a-b}$

D. $\frac{a^2 - ab + b^2}{a+b}$

18. [16-17 S2 Final Exam, #13]

Factorize $3p^2 - 7pq + 4q^2 - 8q + 6p$.

A. $(p-q-2)(3p-4q)$

B. $(p-q+2)(3p-4q)$

C. $(p+q-2)(3p+4q)$

D. $(p+q+2)(3p+4q)$

19. [17-18 S3 Mid-year Exam, #1]

Factorize $12a^2 - 7a - 12$.

A. $(3a+4)(4a-3)$

B. $(3a-4)(4a+3)$

C. $(3a-4)(4a-3)$

D. $(3a+4)(4a+3)$

20. [17-18 S3 Mid-year Exam, #12]

$$256 + 4m^3 =$$

- A. $4(4+m)^3$.
- B. $4(4+m)(16-4m+m^2)$.
- C. $4(8+m)(64+8m+m^2)$.
- D. $4(8+m)(64-8m+m^2)$.

21. [17-18 S3 Final Exam, #1]

Factorize $54a^3 - 2b^3$.

- A. $2(3a-b)(9a^2 + 3ab + b^2)$
- B. $2(3a-b)(9a^2 - 3ab + b^2)$
- C. $2(3a+b)(9a^2 + 3ab + b^2)$
- D. $2(3a+b)(9a^2 - 3ab + b^2)$

22. [18-19 S3 S Test 1, #1]

Factorize $4x^2 - 15xy + 9y^2$.

- A. $(x-3)(4x-3)$
- B. $(x-3)\left(x-\frac{3}{4}\right)$
- C. $(x+3y)(4x+3y)$
- D. $(x-3y)(4x-3y)$

23. [18-19 S3 S Test 1, #10]

Which of the following are factors of $-x^4 - 2x^2 + 3$?

- I. $x^2 + 3$
- II. $1 - x$
- III. $1 + x$

- A. I only
- B. I and III only
- C. II and III only
- D. All of the above

24. [18-19 S3 Mid-year, #1]

Factorize $a^2 - 6a + 5$.

- A. $(a+1)(a+5)$
- B. $(1-a)(a-5)$
- C. $(a-1)(a-5)$
- D. $(a+1)(a-5)$

25. [18-19 S3 Mid-year, #11]

$$\frac{x^2 - 5x + 6}{(3-x)^2} =$$

- A. $\frac{x+2}{3-x}$.
- B. $\frac{x+2}{x-3}$.
- C. $\frac{2-x}{x-3}$.
- D. $\frac{2-x}{3-x}$.

26. [18-19 S3 Mid-year, #12]

Which of the following are factors of $x^2(7 - 2x^2) + 4$?

- I. $2x^2 + 1$
 - II. $2 - x$
 - III. $2 + x$
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- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III

27. [18-19 S3 S Test 2, #1]

Which of the following is **NOT** a polynomial?

- A. 1
- B. $\frac{x}{-y}$
- C. $\frac{-k^2}{3}$
- D. $2x + 5x^2$

28. [18-19 S3 Final, #13]

Factorize $72a^3 - 1125$.

- A. $9(2a - 5)(2a^2 + 10a + 25)$
- B. $9(2a - 5)(4a^2 - 10a + 25)$
- C. $9(2a - 5)(4a^2 + 10a + 25)$
- D. $9(2a - 5)(4a^2 + 20a + 25)$

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