

Brett Robbins Academic Consulting

Mathematics 10C Practice Test

Unit 3: Factors and Products

25 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

The greatest common factor of $24a^4b^2$ and $36a^2b^5$ is

- A) $6a^2b^2$ B) $12a^2b^2$
C) $12a^3b^3$ D) $36a^2b^2$

Question 2

When $(x + 5)(x - 3)$ is expanded, the result is

- A) $x^2 - 2x - 15$ B) $x^2 + 2x + 15$
C) $x^2 + 8x - 15$ D) $x^2 + 2x - 15$

Question 3

When $x^2 + 9x + 20$ is factored, the result is

- A) $(x + 4)(x + 5)$
B) $(x + 2)(x + 10)$
C) $(x - 4)(x - 5)$
D) $(x + 20)(x + 1)$

Question 4

When $x^2 - 49$ is factored, the result is

- A) $(x - 7)(x - 7)$
B) $(x + 7)(x + 7)$
C) $(x - 7)(x + 7)$
D) $(x - 49)(x + 1)$

Question 5

When $6x^2 - 15x$ is factored completely, the result is

- A) $3(2x^2 - 5x)$ B) $3x(2x - 5)$
C) $x(6x - 15)$ D) $3x(2x + 5)$

Question 6

When $(2x + 3)(x - 4)$ is expanded, the result is

A) $2x^2 - 5x - 12$

B) $2x^2 - 11x - 12$

C) $2x^2 - x - 12$

D) $2x^2 - 5x + 12$

Question 7

When $3x^2 + 12x + 9$ is factored completely, the result is

A) $(3x + 3)(x + 3)$

B) $3(x + 2)^2$

C) $(x + 1)(3x + 9)$

D) $3(x + 1)(x + 3)$

Question 8

When $(4x - 3)(x + 2)$ is expanded, the coefficient of the x term is

Question 9

When $x^2 - 5x - 14$ is factored, the result is

A) $(x - 7)(x - 2)$

B) $(x + 7)(x - 2)$

C) $(x - 7)(x + 2)$

D) $(x + 7)(x + 2)$

Question 10

When $(x + 7)^2$ is expanded, the result is

A) $x^2 + 49$

B) $x^2 + 7x + 49$

C) $x^2 + 14x + 49$

D) $x^2 - 14x + 49$

Question 11

When $2x^2 + 7x + 3$ is factored, the result is

A) $(2x + 1)(x + 3)$

B) $(2x + 3)(x + 1)$

C) $(x + 1)(x + 3)$

D) $(2x - 1)(x - 3)$

Question 12

The trinomial $x^2 + bx + 36$ can be factored, and one of its factors is $(x + 4)$.

The value of b is

Question 13

When $9x^2 - 25$ is factored, the result is

A) $(3x - 5)^2$

B) $(3x - 5)(3x + 5)$

C) $(9x - 5)(x + 5)$

D) $(3x + 5)^2$

Question 14

When $(x + 2)(x^2 - 3x + 4)$ is expanded, the result is

A) $x^3 + x^2 - 2x + 8$

B) $x^3 - 3x^2 + 4x + 8$

C) $x^3 - x^2 + 2x + 8$

D) $x^3 - x^2 - 2x + 8$

Question 15

When $12x^3 - 27x$ is factored completely, the number of binomial factors in the factorization is

Question 16

When $5x^2 - 22x - 15$ is factored, the result is

A) $(5x - 3)(x + 5)$

B) $(5x + 5)(x - 3)$

C) $(5x + 3)(x - 5)$

D) $(x + 3)(5x - 5)$

Question 17

A rectangle has a length of $(x + 6)$ and a width of $(x - 2)$.

An expression for the area of the rectangle is

A) $x^2 + 4x - 12$

B) $x^2 - 4x - 12$

C) $x^2 + 8x - 12$

D) $x^2 + 4x + 12$

Question 18

The trinomial $x^2 - 11x + 28$ factors as $(x - a)(x - b)$, where $a > b$.

The value of $a - b$ is

Question 19

Which of the following expressions is a perfect square trinomial?

A) $x^2 + 10x + 16$

B) $x^2 - 12x + 36$

C) $x^2 + 4x + 16$

D) $x^2 - 8x - 16$

Question 20

When $x^2 + 5xy - 6y^2$ is factored, the result is

A) $(x + 6y)(x + y)$

B) $(x - 6y)(x - y)$

C) $(x + 3y)(x + 2y)$

D) $(x + 6y)(x - y)$

Question 21

When $(3x + k)(x - 2)$ is expanded, the constant term is -12 .

The value of k is

Question 22

When $2x^3 + 10x^2 + 12x$ is factored completely, the result is

A) $2(x^3 + 5x^2 + 6x)$

B) $2x(x + 1)(x + 6)$

C) $2x(x + 2)(x + 3)$

D) $2x(x - 2)(x - 3)$

Question 23

The area of a rectangle is $x^2 + 7x - 18$ and its width is $(x - 2)$.

When the length is written in the form $(x + c)$, the value of c is

Question 24

The greatest common factor of $18x^2y^3$, $24x^3y$, and $30xy^2$ is kx^ay^b .

The value of $k + a + b$ is

Question 25

When $6x^2 - x - 12$ is factored, the result is

A) $(3x + 4)(2x - 3)$

B) $(3x - 4)(2x + 3)$

C) $(6x + 4)(x - 3)$

D) $(2x - 4)(3x + 3)$

Answer Key

- | | | |
|------|--------|-------|
| 1. B | 10. C | 19. B |
| 2. D | 11. A | 20. D |
| 3. A | 12. 13 | 21. 6 |
| 4. C | 13. B | 22. C |
| 5. B | 14. D | 23. 9 |
| 6. A | 15. 2 | 24. 8 |
| 7. D | 16. C | 25. A |
| 8. 5 | 17. A | |
| 9. C | 18. 3 | |

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.