

Multiple Choice Questions and Answers: Factoring, Polynomials, and Simplify Rational Expressions

1. Factor the expression completely. $6x^3 - 4x^2 - 16x$

- A. 0
- B. $2x(3x^2 - 2x - 8)$
- C. $2x(3x+4)(x-2)$
- D. $4x(2x+1)(x-4)$

2. If $x^2 - x - 6 = 0$, then x is

- A. -2 or 3
- B. -1 or 6
- C. 1 or -6
- D. 2 or -3

3. $(5a+6)^2 =$

- A. $25a^2 + 36$
- B. $25a^2 - 36$
- C. $25a^2 + 30a + 36$
- D. $25a^2 + 60a + 36$

4. Factor the expression completely. $2x^2 + 4x - 16$

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

5. $(3x^2 - 5x - 6) + (5x^2 + 4x + 4) =$

- A. $8x^2 + x - 2$
- B. $2x^2 - x - 2$
- C. $8x^2 - x - 2$
- D. $2x^2 + x + 2$

6. $(3x^2 - 5x - 6) - (5x^2 + 4x + 4) =$

- A. $-2x^2 - 9x - 10$
- B. $2x^2 + 9x + 10$
- C. $-2x^2 - 9x - 2$
- D. $2x^2 + 9x - 2$

7. $\frac{8x^6 + 8x^4}{2x^2} =$

- A. $8x^{12}$
- B. $8x^5$
- C. $4x^4 + 4x^2$
- D. $4x^3 + 2x^2$

8. If $x > 2$, then $\frac{x^2 - x - 6}{x^2 - 4} =$

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

9. What is the smallest value of x that satisfies this equation $x(x+4) = -3$

- A. -1
- B. 0
- C. 1
- D. -3

10. If $2x^2 + 6x = 36$, what are the possible values of x ?

- A. -12 and 3
- B. -6 and 3
- C. -3 and 6
- D. -3 and 12

11. What polynomial can be added to $x^2 - 2x + 6$ so that the sum is $3x^2 + 7x$?

- A. $4x^2 + 5x + 6$
- B. $3x^2 + 9x + 6$
- C. $2x^2 + 9x - 6$
- D. $2x^2 - 9x - 6$

12. Which of the following is the factored form of the expression $5x^2 - 13x - 6$?

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

Answers:

1. C
2. A
3. D
4. B
5. C
6. A
7. C
8. D
9. D
10. B
11. C
12. A