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## Introduction to College Algebra CLEP Practice Questions

Welcome to the College Algebra CLEP Practice Questions resource, a meticulously curated collection of questions designed to prepare you for the College Algebra CLEP test. This resource is focused on rigorous, high-quality practice that mirrors the format, difficulty, and structure of the actual exam.

### What is the CLEP Test?

The College-Level Examination Program (CLEP) allows students to earn college credit by demonstrating their mastery of college-level material through a standardized exam. The College Algebra CLEP test evaluates your understanding of algebraic concepts typically covered in a one-semester college algebra course.

### How This Resource Helps You Prepare

This resource includes a comprehensive set of practice questions devised to align closely with the CLEP College Algebra test. These questions are not designed to teach or provide detailed explanations but are intended to offer intensive practice in authentic test conditions.

### Key Features

**Authentic Test-Style Questions:** Practice questions are identical in format and style to those found on the actual CLEP exam.

**Varied Difficulty Levels:** Questions are crafted to cover a wide range of difficulty, ensuring thorough preparation.

**Test-Focused Practice:** Simulate real exam conditions to build confidence and improve problem-solving skills.

By engaging with these questions, you'll be able to sharpen your algebra skills, identify areas for improvement, and feel confident and prepared to succeed on the CLEP College Algebra test.

## Linear Equations

1. Solve for  $x$  in the equation  $2x + 5 = 17$ .
  - a) 5
  - b) 6
  - c) 7
  - d) 8
2. If  $3x - 4 = 2x + 6$ , what is the value of  $x$ ?
  - a) 2
  - b) 4
  - c) 8
  - d) 10
3. The sum of a number and 9 is 20. What is the number?
  - a) 9
  - b) 11

- c) 20
- d) 29
- 4. Solve the equation  $5(x - 1) = 15$ .
  - a) 2
  - b) 3
  - c) 4
  - d) 5
- 5. Find  $x$  in the equation  $\frac{1}{2}x - 3 = 4$ .
  - a) 10
  - b) 12
  - c) 14
  - d) 16
- 6. If  $4x + 3 = 2x + 15$ , what is the value of  $x$ ?
  - a) 3
  - b) 6
  - c) 9
  - d) 12
- 7. Solve for  $x$ :  $x + 2 = 3(x - 4)$ .
  - a) 3
  - b) 4
  - c) 5
  - d) 6
- 8. A number is 3 more than twice another number. If their sum is 45, what is the smaller number?
  - a) 14
  - b) 15
  - c) 16
  - d) 17
- 9. The difference between a number and 7 is 9. Find the number.
  - a) 9
  - b) 16
  - c) 17
  - d) 18
- 10. Solve for  $x$  in the equation  $7x - 2 = 5x + 6$ .
  - a) 2
  - b) 3
  - c) 4
  - d) 5

## Quadratic Equations

1. Solve the quadratic equation:

$$x^2 - 5x + 6 = 0$$

- A)  $x = 1, x = 6$
- B)  $x = 2, x = 3$
- C)  $x = -2, x = -3$
- D)  $x = -1, x = -6$

2. Solve for  $x$ :

$$2x^2 + 3x - 5 = 0$$

- A)  $x = 1, x = -\frac{5}{2}$
- B)  $x = \frac{1}{2}, x = -5$

C)  $x = -1, x = \frac{5}{2}$

D)  $x = \frac{-3 \pm \sqrt{41}}{4}$

3. Which of the following represents the vertex form of the quadratic function  $f(x) = x^2 + 4x + 4$ ?

A)  $f(x) = (x + 2)^2$

B)  $f(x) = (x - 2)^2$

C)  $f(x) = (x + 4)^2$

D)  $f(x) = (x - 4)^2$

4. Determine the axis of symmetry for the quadratic equation:

$$y = 3x^2 - 12x + 7$$

A)  $x = 2$

B)  $x = -2$

C)  $x = 3$

D)  $x = -3$

5. If the roots of the quadratic equation  $ax^2 + bx + c = 0$  are real and equal, which of the following statements is true?

A)  $b^2 - 4ac > 0$

B)  $b^2 - 4ac = 0$

C)  $b^2 - 4ac < 0$

D) The roots are complex numbers.

6. Find the maximum or minimum value of the quadratic function

$$f(x) = -2x^2 + 4x + 1$$

A) Maximum at  $x = -1$

B) Maximum at  $x = 1$

C) Minimum at  $x = -2$

D) Minimum at  $x = 2$

7. Solve the equation by completing the square:

$$x^2 + 6x + 8 = 0$$

A)  $x = -4, x = -2$

B)  $x = -1, x = -7$

C)  $x = 3, x = -9$

D)  $x = 2, x = -8$

8. The roots of the quadratic equation  $3x^2 + kx - 9 = 0$  are  $\frac{1}{2}$  and 3. Find the value of  $k$ .

9. Determine the nature of the roots for the quadratic equation:

$$5x^2 + 2x + 1 = 0$$

A) Two distinct real roots

- B) Exactly one real root
  - C) Two complex roots
  - D) Infinitely many roots
10. A quadratic function is given by  $f(x) = 2x^2 - 8x + 6$ . What is the y-intercept of this function?
11. Which quadratic equation has roots  $-3$  and  $4$ ?
- A)  $x^2 + x - 12 = 0$
  - B)  $x^2 - x - 12 = 0$
  - C)  $x^2 - x + 12 = 0$
  - D)  $x^2 + x + 12 = 0$

## Polynomial Functions

1. What is the degree of the polynomial  $f(x) = 4x^5 - 3x^3 + 2x - 7$ ?
  - A) 1
  - B) 3
  - C) 5
  - D) 7
2. Given the polynomial  $p(x) = x^4 + 2x^3 - x^2$ , which of the following is a root?
  - A)  $x = 0$
  - B)  $x = 1$
  - C)  $x = -1$
  - D)  $x = 2$
3. Find the polynomial function with zeros at  $x = -3$ ,  $x = 2$ , and  $x = 4$ .
4. If  $g(x) = 2x^3 - 5x^2 + 4x - 8$ , what is  $g(-1)$ ?
5. Which polynomial is factorable?
  - A)  $x^2 + 4x + 7$
  - B)  $x^2 - 9$
  - C)  $x^2 + 1$
  - D)  $x^2 - 5x + 6$
6. Simplify the expression  $(2x - 1)(3x + 4)$ .
7. What is the leading coefficient of the polynomial  $h(x) = -6x^2 + 3x - 1$ ?
  - A)  $-6$
  - B)  $3$
  - C)  $1$
  - D)  $-1$
8. Determine the remainder when the polynomial  $f(x) = x^3 - 4x^2 + 5x - 2$  is divided by  $x - 2$ .
9. If  $p(x) = 3x^4 - 7x^3 + 2x^2 - x + 5$ , what is the coefficient of  $x^2$ ?

- A) 3
- B)  $-7$
- C) 2
- D) 5

10. True or False: The polynomial  $x^3 + x + 1$  has a degree of 3.