

Student Workbook

This workbook is your ticket to score higher on CLEP College Mathematics

CLEP College Algebra Exercise Book 2019

- Content 100% aligned with the 2019 CLEP test
- Written by CLEP College Algebra tutors and test experts
- Complete coverage of all CLEP College Algebra concepts and topics which you will be tested
- Over 2,500 additional CLEP College Algebra practice questions
- Abundant Math skill building exercises

2 full-length practice tests with detailed answers

Reza Nazari & Ava Ross

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CLEP College Algebra Exercise Book:

Student Workbook

By

Reza Nazari

& Ava Ross

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Reza Nazari & Ava Ross

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Description

Get ready for the CLEP College Algebra Test with a PERFECT Math Workbook!

CLEP College Algebra Exercise book, which reflects the 2019 test guidelines and topics, is dedicated to preparing test takers to ace the CLEP College Algebra Test. This CLEP College Algebra workbook's new edition has been updated to replicate questions appearing on the most recent CLEP College Algebra tests. Here is intensive preparation for the CLEP College Algebra test, and a precious learning tool for test takers who need extra practice in math to raise their CLEP College Algebra scores. After completing this workbook, you will have solid foundation and adequate practice that is necessary to ace the CLEP College Algebra test. **This workbook is your ticket to score higher on CLEP College Algebra.**

The updated version of this hands-on workbook represents extensive exercises, math problems, sample CLEP questions, and quizzes with answers and detailed solutions to help you hone your math skills, overcome your exam anxiety, and boost your confidence -- and do your best to defeat CLEP exam on test day.

Each of math exercises is answered in the book and we have provided explanation of the answers for the two full-length CLEP College Algebra practice tests as well which will help test takers find their weak areas and raise their scores. This is a unique and perfect practice book to beat the CLEP College Algebra Test.

Separate math chapters offer a complete review of the CLEP College Algebra test, including:

- ✓ Arithmetic and Number Operations
- ✓ Algebra and Functions,
- ✓ Geometry and Measurement
- ✓ Data analysis, Statistics, & Probability
- ✓ … and also includes **two full-length practice tests!**

The surest way to succeed on CLEP College Algebra Test is with intensive practice in every math topic tested--and that's what you will get in ***CLEP College Algebra Exercise Book***. Each chapter of this focused format has a comprehensive review created by Test Prep experts that goes into detail to cover all of the content likely to appear on the CLEP College Algebra test. Not only does this all-inclusive workbook offer everything you will ever need to conquer CLEP College Algebra test, it also contains two full-length and realistic CLEP College Algebra tests that reflect

the format and question types on the CLEP to help you check your exam-readiness and identify where you need more practice.

Effortless Math Workbook *for the CLEP Test* contains many exciting and unique features to help you improve your test scores, including:

- ✓ Content 100% aligned with the 2019 CLEP test
- ✓ Written by CLEP College Algebra tutors and test experts
- ✓ Complete coverage of all CLEP College Algebra concepts and topics which you will be tested
- ✓ Over 2,500 additional CLEP College Algebra practice questions in both multiple-choice and grid-in formats with answers grouped by topic, so you can focus on your weak areas
- ✓ Abundant Math skill building exercises to help test-takers approach different question types that might be unfamiliar to them
- ✓ Exercises on different CLEP College Algebra topics such as integers, percent, equations, polynomials, exponents and radicals
- ✓ 2 full-length practice tests (featuring new question types) with detailed answers

This CLEP College Algebra Workbook and other Effortless Math Education books are used by thousands of students each year to help them review core content areas, brush-up in math, discover their strengths and weaknesses, and achieve their best scores on the CLEP test.

Do NOT take the CLEP College Algebra test without reviewing the Math questions in this workbook!

About the Author

Reza Nazari is the author of more than 100 Math learning books including:
– Math and Critical Thinking Challenges: For the Middle and High School Student
– GED Math in 30 Days
– ASVAB Math Workbook 2018 - 2019
– Effortless Math Education Workbooks
– and many more Mathematics books …

Reza is also an experienced Math instructor and a test–prep expert who has been tutoring students since 2008. Reza is the founder of Effortless Math Education, a tutoring company that has helped many students raise their standardized test scores—and attend the colleges of their dreams. Reza provides an individualized custom learning plan and the personalized attention that makes a difference in how students view math.

To ask questions about Math, you can contact Reza via email at:
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Find Reza's professional profile at:
goo.gl/zoC9rJ

Contents

Chapter 1: Fundamentals and Building Blocks 10
Order of Operations 11
Scientific Notation 12
Exponents Operations 13
Sets 14
Evaluating Expressions 15
Simplifying Algebraic Expressions 16
Answers of Worksheets – Chapter 1 17
Chapter 2: Equations and Inequalities 19
One–Step Equations 20
Multi–Step Equations 21
Graphing Single–Variable Inequalities 22
One–Step Inequalities 23
Multi-Step Inequalities 24
Answers of Worksheets – Chapter 2 25
Chapter 3: System of Equations and Quadratic 28
Systems of Equations 29
Systems of Equations Word Problems 30
Systems of 3 Variable Equations 31
Quadratic 32
Solving Quadratic Equations 33
Quadratic Formula and the Discriminant 34
Quadratic Inequalities 35
Graphing Quadratic Functions 36
Answers of Worksheets – Chapter 4 37
Chapter 5: Complex Numbers 40
Adding and Subtracting Complex Numbers 41
Multiplying and Dividing Complex Numbers 42
Graphing Complex Numbers 43

Rationalizing Imaginary Denominators 44
Answers of Worksheets – Chapter 5 45
Chapter 6: Polynomial Operations 47
Writing Polynomials in Standard Form 48
Simplifying Polynomials 49
Adding and Subtracting Polynomials 50
Multiplying Monomials 51
Multiplying and Dividing Monomials 52
Multiplying a Polynomial and a Monomial 53
Multiplying Binomials 54
Factoring Trinomials 55
Operations with Polynomials 56
Answers of Worksheets – Chapter 6 57
Chapter 7: Functions Operations 61
Evaluating Function 62
Adding and Subtracting Functions 63
Multiplying and Dividing Functions 64
Composition of Functions 65
Answers of Worksheets – Chapter 7 66
Chapter 8: Logarithms 68
Rewriting Logarithms 69
Evaluating Logarithms 70
Properties of Logarithms 71
Natural Logarithms 72
Exponential Equations and Logarithms 73
Solving Logarithmic Equations 74
Answers of Worksheets – Chapter 8 75
Chapter 9: Radical Expressions 78
Simplifying Radical Expressions 79
Multiplying Radical Expressions 80

Simplifying Radical Expressions Involving Fractions 81
Adding and Subtracting Radical Expressions 82
Domain and Range of Radical Functions 83
Solving Radical Equations 84
Answers of Worksheets – Chapter 9 85
Chapter 10: Rational Expressions 89
Simplifying and Graphing Rational Expressions 90
Adding and Subtracting Rational Expressions 91
Multiplying and Dividing Rational Expressions 92
Solving Rational Equations and Complex Fractions 93
Answers of Worksheets – Chapter 10 94
Chapter 11: Sequences and Series 97
Arithmetic Sequences 98
Geometric Sequences 99
Finite Geometric Series 100
Infinite Geometric Series 101
Answers of Worksheets – Chapter 11 102
CLEP College Algebra Test Review 104
CLEP College Algebra Practice Tests 105
CLEP College Algebra Practice Test 1 108
CLEP College Algebra Practice Test 2 125
CLEP College Algebra Practice Tests Answers and Explanations 142

Chapter 1: Fundamentals and Building Blocks

Topics that you'll learn in this chapter:

- ✓ The Order of Operation
- ✓ Scientific Notation
- ✓ Exponents Operations
- ✓ Sets
- ✓ Evaluating Expressions
- ✓ Simplifying Algebraic Expressions

Order of Operations

Evaluate each expression.

1) $5 + (4 \times 2) =$

2) $13 - (2 \times 5) =$

3) $(16 \times 2) + 18 =$

4) $(12 - 5) - (4 \times 3) =$

5) $25 + (14 \div 2) =$

6) $(18 \times 5) \div 5 =$

7) $(48 \div 2) \times (-4) =$

8) $(7 \times 5) + (25 - 12) =$

9) $64 + (3 \times 2) + 8 =$

10) $(20 \times 5) \div (4 + 1) =$

11) $(-9) + (12 \times 6) + 15 =$

12) $(7 \times 8) - (56 \div 4) =$

13) $(4 \times 8 \div 2) - (17 + 11) =$

14) $(18 + 8 - 15) \times 5 - 3 =$

15) $(25 - 12 + 45) \times (95 \div 5) =$

16) $28 + \big(15 - (32 \div 2)\big) =$

17) $(6 + 7 - 4 - 9) + (18 \div 2) =$

18) $(95 - 17) + (10 - 25 + 9) =$

19) $(18 \times 2) + (15 \times 5) - 12 =$

20) $12 + 8 - (42 \times 4) + 50 =$

Scientific Notation

Write each number in scientific notation.

1) $0.113 =$
2) $0.02 =$
3) $2.5 =$
4) $20 =$
5) $60 =$
6) $0.004 =$
7) $78 =$
8) $1{,}600 =$
9) $1{,}450 =$
10) $91{,}000 =$
11) $2{,}000{,}000 =$
12) $0.0000006 =$
13) $354{,}000 =$
14) $0.000325 =$
15) $0.00023 =$
16) $56{,}000{,}000 =$
17) $21{,}000 =$
18) $78{,}000{,}000 =$
19) $0.0000022 =$
20) $0.00012 =$

Write each number in standard notation.

21) $3 \times 10^{-1} =$
22) $5 \times 10^{-2} =$
23) $1.2 \times 10^{3} =$
24) $2 \times 10^{-4} =$
25) $1.5 \times 10^{-2} =$
26) $4 \times 10^{3} =$
27) $9 \times 10^{5} =$
28) $1.12 \times 10^{4} =$
29) $3 \times 10^{-5} =$
30) $8.3 \times 10^{-5} =$

Exponents Operations

Simplify.

1) $(4^2)^2 =$

2) $(6^2)^3 =$

3) $(2 \times 2^3)^4 =$

4) $(4 \times 4^4)^2 =$

5) $(3^3 \times 3^2)^3 =$

6) $(5^4 \times 5^5)^2 =$

7) $(2 \times 2^4)^2 =$

8) $(2^6)^2 =$

9) $(11x^5)^2 =$

10) $(4x^2y^4)^4 =$

11) $(2x^4y^4)^3 =$

12) $(3x^2y^2)^2 =$

13) $(3x^4y^3)^4 =$

14) $(2x^6y^8)^2 =$

15) $(12x^3x)^3 =$

16) $(2x^9x^6)^3 =$

17) $(5x^{10}y^3)^3 =$

18) $(4x^3x^3)^2 =$

19) $(3x^3.5x)^2 =$

20) $(10x^{11}y^3)^2 =$

21) $(9x^7y^5)^2 =$

22) $(4x^4y^6)^5 =$

23) $(3x.4y^3)^2 =$

24) $(\frac{5x}{x^2})^2 =$

25) $\left(\frac{x^4y^4}{x^2y^2}\right)^3 =$

26) $\left(\frac{25x}{5x^6}\right)^2 =$

27) $\left(\frac{x^8}{x^6y^2}\right)^2 =$

28) $\left(\frac{xy^2}{x^3y^3}\right)^{-2} =$

29) $\left(\frac{2xy^4}{x^3}\right)^2 =$

30) $\left(\frac{xy^4}{5xy^2}\right)^{-3} =$

Sets

Given $A = \{1, 2, 3, 8, 12\}$, $B = \{2, 4, 5, 7\}$, **and** $C = \{5, 7, 9, 11\}$, **find:**

1) $A \cup B$ _____

2) $A \cup C$ _____

3) $B \cup C$ _____

4) $A \cap B$ _____

5) $A \cap C$ _____

6) $B \cap C$ _____

7) $(A \cup B) \cup C$ _____

8) $(A \cup B) \cap C$ _____

9) $(A \cap B) \cap C$ _____

10) $(B \cup C) \cap A$ _____

Refer to the diagram below to find each set.

11) $A \cup B$ _____

12) $A \cup C$ _____

13) $B \cup C$ _____

14) $A \cap B$ _____

15) $A \cap C$ _____

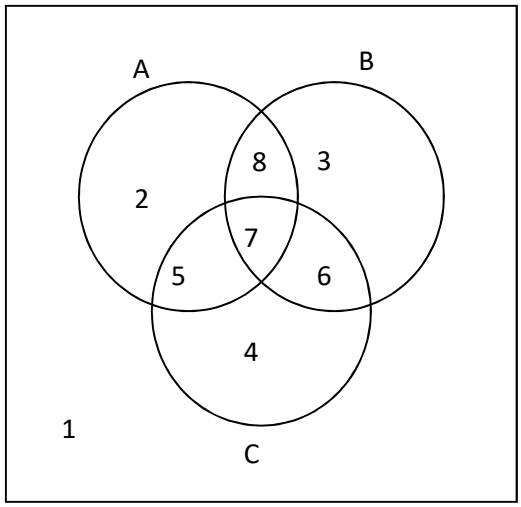
16) $B \cap C$ _____

17) $(A \cup B) \cup C$ _____

18) $(A \cup B) \cap C$ _____

19) $(A \cap B) \cap C$ _____

20) $(B \cup C) \cap A$ _____



Evaluating Expressions

Evaluate each expression using the values given.

1) $2x + 4y$,
$x = 3, y = 2$

2) $8x + 5y$,
$x = 1, y = 5$

3) $-2a + 4b$,
$a = 6, b = 3$

4) $4x + 7 - 2y$,
$x = 7, y = 6$

5) $5z + 12 - 4k$,
$z = 5\ , k = 2$

6) $2\ (-x - 2y)$,
$x = 6, y = 9$

7) $18a + 2b$,
$a = 2, b = 8$

8) $4x \div 3y$,
$x = 3, y = 2$

9) $2x + 15 + 4y$,
$x = -2, y = 4$

10) $4a - (15 - b)$,
$a = 4, b = 6$

11) $5z + 19 + 8k$,
$z = -5, k = 4$

12) $xy + 12 + 5x$,
$x = 7, y = 2$

13) $2x + 4y - 3 + 2$,
$x = 5, y = 3$

14) $\left(-\frac{12}{x}\right) + 1 + 5y$,
$x = 6, y = 8$

15) $(-4)\ (-2a - 2b)$,
$a = 5, b = 3$

16) $10 + 3x + 7 - 2y$,
$x = 7, y = 6$

17) $9x + 2 - 4y + 5$,
$x = 7, y = 5$

18) $6 + 3(-2x - 3y)$,
$x = 9, y = 7$

19) $2x + 14 + 4y$,
$x = 6, y = 8$

20) $4a - (5a - b) + 5$,
$a = 4, b = 6$

Simplifying Algebraic Expressions

Simplify each expression.

1) $3(x+9) =$

2) $(-6)(8x-4) =$

3) $7x+3-3x =$

4) $-2-x^2-6x^2 =$

5) $3+10x^2+2 =$

6) $8x^2+6x+7x^2 =$

7) $5x^2-12x^2+8x =$

8) $2x^2-2x-x =$

9) $4x+6(2-5x) =$

10) $10x+8(10x-6) =$

11) $9\,(-2x-6)-5 =$

12) $2x^2+(-8x) =$

13) $x-3+5-3x =$

14) $2-3x+12-2x =$

15) $32x-4+23+2x =$

16) $(-6)(8x-4)+10x =$

17) $14x-5(5-8x) =$

18) $23x+4(9x+3)+12 =$

19) $3(-7x+5)+20x =$

20) $12x-3x(x+9) =$

21) $7x+5x(3-3x) =$

22) $5x(-8x+12)+14x =$

23) $40x+12+2x^2 =$

24) $5x(x-3)-10 =$

25) $8x-7+8x+2x^2 =$

26) $2x^2-5x-7x =$

27) $7x-3x^2-5x^2-3 =$

28) $4+x^2-6x^2-12x =$

29) $12x+8x^2+2x+20 =$

30) $2x^2+6x+3x^2 =$

31) $23+15x^2+8x-4x^2 =$

32) $8x-12x-x^2+13 =$

Answers of Worksheets – Chapter 1

The Order of Operation

1) 13
2) 3
3) 50
4) -5
5) 32
6) 18
7) -96
8) 48
9) 78
10) 20
11) 78
12) 42
13) -12
14) 52
15) 1,102
16) 27
17) 9
18) 72
19) 99
20) -98

Scientific Notation

1) 2×10^{-2}
2) 2.5×10^{0}
3) 2×10^{1}
4) 6×10^{1}
5) 4×10^{-3}
6) 7.8×10^{1}
7) 1.6×10^{3}
8) 1.45×10^{3}
9) 9.1×10^{4}
10) 2×10^{6}
11) 6×10^{-7}
12) 3.54×10^{5}
13) 3.25×10^{-4}
14) 2.3×10^{-4}
15) 5.6×10^{7}
16) 2.1×10^{4}
17) 7.8×10^{7}
18) 2.2×10^{-6}
19) 1.2×10^{-4}
20) 0.3
21) 0.05
22) 1,200
23) 0.0002
24) 0.015
25) 4,000
26) 900,000
27) 11,200
28) 0.00003
29) 0.000083

Exponents Operations

1) 4^4
2) 6^6
3) 2^{16}
4) 4^{10}
5) 3^{15}
6) 5^{18}
7) 2^{10}
8) 2^{12}
9) $121x^{10}$
10) $256x^{8}y^{16}$
11) $8x^{12}y^{12}$
12) $9x^{4}y^{4}$
13) $81x^{16}y^{12}$
14) $4x^{12}y^{16}$
15) $1{,}728x^{12}$
16) $8x^{45}$
17) $125x^{30}y^{9}$
18) $16x^{12}$
19) $225x^{8}$
20) $100x^{22}y^{6}$
21) $81x^{14}y^{10}$
22) $1{,}024x^{20}y^{30}$
23) $144x^{2}y^{6}$
24) $\frac{25}{x^2}$
25) $x^{2}y^{2}$
26) $\frac{25y^4}{x^{10}}$
27) $\frac{x^4}{y^4}$
28) $x^{4}y^{2}$
29) $\frac{4y^8}{x^4}$
30) $\frac{125}{y^6}$

Sets

1) $\{1, 2, 3, 4, 5, 7, 8, 12\}$
2) $\{1, 2, 3, 5, 7, 8, 9, 11, 12\}$
3) $\{2, 4, 5, 7, 9, 11\}$
4) $\{2\}$
5) $\{\quad\}$ *(empty set)*
6) $\{5, 7\}$
7) $\{1, 2, 3, 4, 5, 7, 8, 9, 11, 12\}$
8) $\{5, 7\}$
9) $\{\quad\}$ *(empty set)*
10) $\{2\}$
11) $\{2, 3, 5, 6, 7, 8\}$
12) $\{2, 4, 5, 6, 7, 8\}$
13) $\{3, 4, 5, 6, 7, 8\}$
14) $\{7, 8\}$
15) $\{5, 7\}$
16) $\{6, 7\}$
17) $\{2, 3, 4, 5, 6, 7, 8\}$
18) $\{5, 6, 7\}$
19) $\{7\}$
20) $\{5, 7, 8\}$

Evaluating Expressions

1) 14
2) 33
3) 0
4) 23
5) 29
6) -48
7) 52
8) 2
9) 27
10) 7
11) 26
12) 61
13) 21
14) 39
15) 64
16) 26
17) 50
18) -111
19) 58
20) 7

Simplifying Algebraic Expressions

1) $3x + 27$
2) $-48x + 24$
3) $4x + 3$
4) $-7x^2 - 2$
5) $10x^2 + 5$
6) $15x^2 + 6x$
7) $-7x^2 + 8x$
8) $2x^2 - 3x$
9) $-24x + 12$
10) $90x - 48$
11) $-18x - 59$
12) $2x^2 - 8x$
13) $-2x + 2$
14) $-5x + 14$
15) $34x + 19$
16) $-38x + 24$
17) $54x - 25$
18) $59x + 24$
19) $-x + 15$
20) $-3x^2 - 15x$
21) $-15x^2 + 22x$
22) $-40x^2 + 74x$
23) $2x^2 + 40x + 12$
24) $5x^2 - 15x - 10$
25) $2x^2 + 16x - 7$
26) $2x^2 - 12x$
27) $-8x^2 + 7x - 3$
28) $-5x^2 - 12x + 4$
29) $8x^2 + 14x + 20$
30) $5x^2 + 6x$
31) $11x^2 + 8x + 23$
32) $-x^2 - 4x + 13$

Chapter 2: Equations and Inequalities

Topics that you'll learn in this chapter:

- ✓ One–Step Equations
- ✓ Multi–Step Equations
- ✓ Graphing Single–Variable Inequalities
- ✓ One–Step Inequalities
- ✓ Multi-Step Inequalities