ACT Mathematics Prep 2019

A Comprehensive Review and Ultimate Guide to the ACT Math Test

- 2 Full-Length ACT Math Practice Exams
- 2,500 + Math problems with answers
- A comprehensive review of everything on ACT Math

Reza Nazari & Ava Ross

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A Comprehensive Review and Ultimate Guide to the ACT Math Test

By

Reza Nazari & Ava Ross

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Description

ACT Mathematics Prep 2019 provides students with the confidence and math skills they need to succeed on the ACT Math, building a solid foundation of basic Math topics with abundant exercises for each topic. It is designed to address the needs of ACT test takers who must have a working knowledge of basic Math.

This comprehensive book with over 2,500 sample questions and 2 complete ACT tests is all you need to fully prepare for the ACT Math. It will help you learn everything you need to ace the math section of the ACT.

Effortless Math unique study program provides you with an in-depth focus on the math portion of the exam, helping you master the math skills that students find the most troublesome.
This book contains most common sample questions that are most likely to appear in the mathematics section of the ACT.

Inside the pages of this comprehensive ACT Math book, students can learn basic math operations in a structured manner with a complete study program to help them understand essential math skills. It also has many exciting features, including:

- Dynamic design and easy-to-follow activities
- A fun, interactive and concrete learning process
- Targeted, skill-building practices
- Fun exercises that build confidence
- Math topics are grouped by category, so you can focus on the topics you struggle on
- All solutions for the exercises are included, so you will always find the answers
- 2 Complete ACT Math Practice Tests that reflect the format and question types on ACT

ACT Mathematics Prep 2019 is an incredibly useful tool for those who want to review all topics being covered on the ACT test. It efficiently and effectively reinforces learning outcomes through engaging questions and repeated practice, helping you to quickly master basic Math skills.

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.

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Contents

Chapter 1: Fundamentals and Building Blocks 11

Simplifying Fractions 12

Adding and Subtracting Fractions 13

Multiplying and Dividing Fractions 14

Adding Mixed Numbers 15

Subtract Mixed Numbers 16

Multiplying Mixed Numbers 17

Dividing Mixed Numbers 18

Comparing Decimals 19

Rounding Decimals 20

Adding and Subtracting Decimals 21

Multiplying and Dividing Decimals 22

Converting Between Fractions, Decimals and Mixed Numbers 23

Factoring Numbers 24

Greatest Common Factor 25

Least Common Multiple 26

Answers of Worksheets – Chapter 1 27

Chapter 2: Real Numbers and Integers 32

Adding and Subtracting Integers 33

Multiplying and Dividing Integers 34

Ordering Integers and Numbers 35

Arrange, Order, and Comparing Integers 36

Order of Operations 37

Mixed Integer Computations 38

Integers and Absolute Value 39

Answers of Worksheets – Chapter 2 40

Chapter 3: Proportions and Ratios 43

Writing Ratios 44

Simplifying Ratios 45

Create a Proportion 46

Similar Figures 47

Ratio and Rates Word Problems 48
Answers of Worksheets – Chapter 3 49
Chapter 4: Percent 51
Percentage Calculations 52
Converting Between Percent, Fractions, and Decimals 53
Percent Problems 54
Markup, Discount, and Tax 55
Simple Interest 56
Answers of Worksheets – Chapter 4 57
Chapter 5: Algebraic Expressions 59
Expressions and Variables 60
Simplifying Variable Expressions 61
Simplifying Polynomial Expressions 62
Translate Phrases into an Algebraic Statement 63
The Distributive Property 64
Evaluating One Variable 65
Evaluating Two Variables 66
Combining like Terms 67
Answers of Worksheets – Chapter 5 68
Chapter 6: Equations 70
One–Step Equations 71
Two–Step Equations 72
Multi–Step Equations 73
Answers of Worksheets – Chapter 6 74
Chapter 7: Inequalities 75
Graphing Single–Variable Inequalities 76
One–Step Inequalities 77
Two–Step Inequalities 78
Multi–Step Inequalities 79
Answers of Worksheets – Chapter 7 80
Chapter 8: Linear Functions 82
Finding Slope 83

Graphing Lines Using Slope–Intercept Form 84
Graphing Lines Using Standard Form 85
Writing Linear Equations 86
Graphing Linear Inequalities 87
Finding Midpoint 88
Finding Distance of Two Points 89
Answers of Worksheets – Chapter 8 90
Chapter 9: Polynomials 94
Classifying Polynomials 95
Writing Polynomials in Standard Form 96
Simplifying Polynomials 97
Adding and Subtracting Polynomials 98
Multiplying Monomials 99
Multiplying and Dividing Monomials 100
Multiplying a Polynomial and a Monomial 101
Multiplying Binomials 102
Factoring Trinomials 103
Operations with Polynomials 104
Answers of Worksheets – Chapter 9 105
Chapter 10: Quadratic and System of Equations 109
Solve a Quadratic Equation 110
Solving Systems of Equations by Substitution 111
Solving Systems of Equations by Elimination 112
Systems of Equations Word Problems 113
Answers of Worksheets – Chapter 10 114
Chapter 11: Quadratic Functions 115
Graphing Quadratic Functions 116
Solving Quadratic Equations 117
Use the Quadratic Formula and the Discriminant 118
Solve Quadratic Inequalities 119
Answers of Worksheets – Chapter 11 120
Chapter 12: Complex numbers 123

Adding and Subtracting Complex Numbers 124
Multiplying and Dividing Complex Numbers 125
Graphing Complex Numbers 126
Rationalizing Imaginary Denominators 127
Answers of Worksheets – Chapter 12 128
Chapter 13: Exponents and Radicals 130
Multiplication Property of Exponents 131
Division Property of Exponents 132
Powers of Products and Quotients 133
Zero and Negative Exponents 134
Negative Exponents and Negative Bases 135
Writing Scientific Notation 136
Square Roots 137
Answers of Worksheets – Chapter 13 138
Chapter 14: Statistics and Probability 141
Mean, Median, Mode, and Range of the Given Data 142
The Pie Graph or Circle Graph 143
Probability of Simple Events 144
Factorials 145
Permutations 146
Combination 147
Answers of Worksheets – Chapter 14 148
Chapter 15: Geometry 150
The Pythagorean Theorem 151
Area of Triangles 152
Perimeter of Polygons 153
Area and Circumference of Circles 154
Area of Squares, Rectangles, and Parallelograms 155
Area of Trapezoids 156
Answers of Worksheets – Chapter 15 157
Chapter 16: Solid Figures 158
Volume of Cubes 159

Volume of Rectangle Prisms 160
Surface Area of Cubes 161
Surface Area of a Rectangle Prism 162
Volume of a Cylinder 163
Surface Area of a Cylinder 164
Answers of Worksheets – Chapter 16 165
Chapter 17: Logarithms 166
Rewriting Logarithms 167
Evaluating Logarithms 168
Properties of Logarithms 169
Natural Logarithms 170
Solving Exponential Equations Requiring Logarithms 171
Solving Logarithmic Equations 172
Answers of Worksheets – Chapter 17 173
Chapter 18: Matrices 175
Adding and Subtracting Matrices 176
Matrix Multiplication 177
Finding Determinants of a Matrix 178
Finding Inverse of a Matrix 179
Matrix Equations 180
Answers of Worksheets – Chapter 18 181
Chapter 19: Functions Operations 184
Function Notation 185
Adding and Subtracting Functions 186
Multiplying and Dividing Functions 187
Composition of Functions 188
Answers of Worksheets – Chapter 19 189
Chapter 20: Trigonometric Functions 190
Trig ratios of General Angles 191
Sketch Each Angle in Standard Position 192
Finding Co-terminal Angles and Reference Angles 193
Writing Each Measure in Radians 194

Writing Each Measure in Degrees 195
Evaluating Each Trigonometric Function 196
Missing Sides and Angles of a Right Triangle 197
Arc Length and Sector Area 198
Answers of Worksheets – Chapter 20 199
Chapter 21: Radical Expressions 202
Simplifying Radical Expressions 203
Simplifying Radical Expressions Involving Fractions 204
Multiplying Radical Expressions 205
Adding and Subtracting Radical Expressions 206
Domain and Range of Radical Functions 207
Solving Radical Equations 208
Answers of Worksheets – Chapter 21 209
Chapter 22: Sequences and Series 212
Arithmetic Sequences 213
Geometric Sequences 214
Comparing Arithmetic and Geometric Sequences 215
Finite Geometric Series 216
Infinite Geometric Series 217
Answers of Worksheets – Chapter 22 218
ACT Mathematics Practice Tests 221
ACT Mathematics Practice Tests Answers and Explanations 266

Chapter 1: Fundamentals and Building Blocks

Topics that you'll learn in this chapter:

- ✓ Simplifying Fractions
- ✓ Adding and Subtracting Fractions
- ✓ Multiplying and Dividing Fractions
- ✓ Adding Mixed Numbers
- ✓ Subtract Mixed Numbers
- ✓ Multiplying Mixed Numbers
- ✓ Dividing Mixed Numbers
- ✓ Comparing Decimals
- ✓ Rounding Decimals
- ✓ Adding and Subtracting Decimals
- ✓ Multiplying and Dividing Decimals
- ✓ Converting Between Fractions, Decimals and Mixed Numbers
- ✓ Factoring Numbers
- ✓ Greatest Common Factor
- ✓ Least Common Multiple

"A Man is like a fraction whose numerator is what he is and whose denominator is what he thinks of himself. The larger the denominator, the smaller the fraction." –Tolstoy

Simplifying Fractions

Helpful Hints

– Evenly divide both the top and bottom of the fraction by 2, 3, 5, 7, ... etc.
– Continue until you can't go any further.

Example:

$\frac{4}{12} = \frac{2}{6} = \frac{1}{3}$

Simplify the fractions.

1) $\frac{22}{36}$

2) $\frac{8}{10}$

3) $\frac{12}{18}$

4) $\frac{6}{8}$

5) $\frac{13}{39}$

6) $\frac{5}{20}$

7) $\frac{16}{36}$

8) $\frac{18}{36}$

9) $\frac{20}{50}$

10) $\frac{6}{54}$

11) $\frac{45}{81}$

12) $\frac{21}{28}$

13) $\frac{35}{56}$

14) $\frac{52}{64}$

15) $\frac{13}{65}$

16) $\frac{44}{77}$

17) $\frac{21}{42}$

18) $\frac{15}{36}$

19) $\frac{9}{24}$

20) $\frac{20}{80}$

21) $\frac{25}{45}$

Adding and Subtracting Fractions

Helpful Hints

– For "like" fractions (fractions with the same denominator), add or subtract the numerators and write the answer over the common denominator.

– Find equivalent fractions with the same denominator before you can add or subtract fractions with different denominators.

– Adding and Subtracting with the same denominator:

$$\frac{a}{b}+\frac{c}{b}=\frac{a+c}{b}$$
$$\frac{a}{b}-\frac{c}{b}=\frac{a-c}{b}$$

– Adding and Subtracting fractions with different denominators:

$$\frac{a}{b}+\frac{c}{d}=\frac{ad+cb}{bd}$$
$$\frac{a}{b}-\frac{c}{d}=\frac{ad-cb}{bd}$$

Add fractions.

1) $\frac{2}{3}+\frac{1}{2}$

2) $\frac{3}{5}+\frac{1}{3}$

3) $\frac{5}{6}+\frac{1}{2}$

4) $\frac{7}{4}+\frac{5}{9}$

5) $\frac{2}{5}+\frac{1}{5}$

6) $\frac{3}{7}+\frac{1}{2}$

7) $\frac{3}{4}+\frac{2}{5}$

8) $\frac{2}{3}+\frac{1}{5}$

9) $\frac{16}{25}+\frac{3}{5}$

Subtract fractions.

10) $\frac{4}{5}-\frac{2}{5}$

11) $\frac{3}{5}-\frac{2}{7}$

12) $\frac{1}{2}-\frac{1}{3}$

13) $\frac{8}{9}-\frac{3}{5}$

14) $\frac{3}{7}-\frac{3}{14}$

15) $\frac{4}{15}-\frac{1}{10}$

16) $\frac{3}{4}-\frac{13}{18}$

17) $\frac{5}{8}-\frac{2}{5}$

18) $\frac{1}{2}-\frac{1}{9}$

Multiplying and Dividing Fractions

Helpful Hints

– **Multiplying fractions:** multiply the top numbers and multiply the bottom numbers.

– **Dividing fractions:** Keep, Change, Flip

Keep first fraction, change division sign to multiplication, and flip the numerator and denominator of the second fraction. Then, solve!

Example:

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times \mathrm{d}}$$

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c} = \frac{ad}{bc}$$

Multiplying fractions. Then simplify.

1) $\frac{1}{5} \times \frac{2}{3}$

2) $\frac{3}{4} \times \frac{2}{3}$

3) $\frac{2}{5} \times \frac{3}{7}$

4) $\frac{3}{8} \times \frac{1}{3}$

5) $\frac{3}{5} \times \frac{2}{5}$

6) $\frac{7}{9} \times \frac{1}{3}$

7) $\frac{2}{3} \times \frac{3}{8}$

8) $\frac{1}{4} \times \frac{1}{3}$

9) $\frac{5}{7} \times \frac{7}{12}$

Dividing fractions.

10) $\frac{2}{9} \div \frac{1}{4}$

11) $\frac{1}{2} \div \frac{1}{3}$

12) $\frac{6}{11} \div \frac{3}{4}$

13) $\frac{11}{14} \div \frac{1}{10}$

14) $\frac{3}{5} \div \frac{5}{9}$

15) $\frac{1}{2} \div \frac{1}{2}$

16) $\frac{3}{5} \div \frac{1}{5}$

17) $\frac{12}{21} \div \frac{3}{7}$

18) $\frac{5}{14} \div \frac{9}{10}$

Adding Mixed Numbers

Helpful Hints

Use the following steps for both adding and subtracting mixed numbers.

– Find the Least Common Denominator (LCD)
– Find the equivalent fractions for each mixed number.
– Add fractions after finding common denominator.
– Write your answer in lowest terms.

Example:

$1\frac{3}{4} + 2\frac{3}{8} = 4\frac{1}{8}$

Add.

1) $4\frac{1}{2} + 5\frac{1}{2}$

2) $2\frac{3}{8} + 3\frac{1}{8}$

3) $6\frac{1}{5} + 3\frac{2}{5}$

4) $1\frac{1}{3} + 2\frac{2}{3}$

5) $5\frac{1}{6} + 5\frac{1}{2}$

6) $3\frac{1}{3} + 1\frac{1}{3}$

7) $1\frac{10}{11} + 1\frac{1}{3}$

8) $2\frac{3}{6} + 1\frac{1}{2}$

9) $5\frac{3}{5} + 5\frac{1}{5}$

10) $7 + \frac{1}{5}$

11) $1\frac{5}{7} + \frac{1}{3}$

12) $2\frac{1}{4} + 1\frac{1}{2}$

Subtract Mixed Numbers

Helpful Hints

Use the following steps for both adding and subtracting mixed numbers.

Find the Least Common Denominator (LCD)
– Find the equivalent fractions for each mixed number.
– Add or subtract fractions after finding common denominator.
– Write your answer in lowest terms.

Example:

$5\frac{2}{3} - 3\frac{2}{7} = 2\frac{8}{21}$

Subtract.

1) $4\frac{1}{2} - 3\frac{1}{2}$

2) $3\frac{3}{8} - 3\frac{1}{8}$

3) $6\frac{3}{5} - 5\frac{1}{5}$

4) $2\frac{1}{3} - 1\frac{2}{3}$

5) $6\frac{1}{6} - 5\frac{1}{2}$

6) $3\frac{1}{3} - 1\frac{1}{3}$

7) $2\frac{10}{11} - 1\frac{1}{3}$

8) $2\frac{1}{2} - 1\frac{1}{2}$

9) $6\frac{3}{5} - 2\frac{1}{5}$

10) $7\frac{2}{5} - 1\frac{1}{5}$

11) $2\frac{5}{7} - 1\frac{1}{3}$

12) $2\frac{1}{4} - 1\frac{1}{2}$

Multiplying Mixed Numbers

Helpful Hints

1- Convert the mixed numbers to improper fractions.
2- Multiply fractions and simplify if necessary.

$$a\frac{c}{b} = a + \frac{c}{b} = \frac{ab+c}{b}$$

Example:

$$2\frac{1}{3} \times 5\frac{3}{7} =$$

$$\frac{7}{3} \times \frac{38}{7} = \frac{38}{3} = 12\frac{2}{3}$$

Find each product.

1) $1\frac{2}{3} \times 1\frac{1}{4}$

2) $1\frac{3}{5} \times 1\frac{2}{3}$

3) $1\frac{2}{3} \times 3\frac{2}{7}$

4) $4\frac{1}{8} \times 1\frac{2}{5}$

5) $2\frac{2}{5} \times 3\frac{1}{5}$

6) $1\frac{1}{3} \times 1\frac{2}{3}$

7) $1\frac{5}{8} \times 2\frac{1}{2}$

8) $3\frac{2}{5} \times 2\frac{1}{5}$

9) $2\frac{2}{3} \times 4\frac{1}{4}$

10) $2\frac{3}{5} \times 1\frac{2}{4}$

11) $1\frac{1}{3} \times 1\frac{1}{4}$

12) $3\frac{2}{5} \times 1\frac{1}{5}$