ACT Aspire Grade 8 Mathematics

A Comprehensive Review and Ultimate Guide to the ACT Aspire Math Test

2 Full-Length ACT Aspire Math Practice Exams

2,500 + Math problems with answers

A comprehensive review of everything on ACT Aspire Math

Reza Nazari & Ava Ross

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A Comprehensive Review and Ultimate Guide to the ACT Aspire Math Test

By

Reza Nazari

& Ava Ross

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Description

The goal of this book is simple. It will help your student incorporates the best method and the right strategies to prepare for the ACT Aspire Mathematics test FAST and EFFECTIVELY.

ACT Aspire Grade 8 Mathematics is full of specific and detailed material that will be key to succeeding on the ACT Aspire Math. It's filled with the critical math concepts a student will need in order to ace the test. Math concepts in this book break down the topics, so the material can be quickly grasped. Examples are worked step–by–step, so you learn exactly what to do.

ACT Aspire Math Workbook helps your student to focus on all Math topics that students will need to ace the ACT Aspire Math test. This book with 2 complete ACT Aspire tests is all your student will ever need to fully prepare for the ACT Aspire Math.

This workbook includes practice test questions. It contains easy–to–read essential summaries that highlight the key areas of the ACT Aspire Math test. Effortless Math test study guide reviews the most important components of the ACT Aspire Math test. Anyone planning to take the ACT Aspire Math test should take advantage of the review material and practice test questions contained in this study guide.

Inside the pages of this workbook, 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
- Math topics are grouped by category, so students can focus on the topics they struggle on
- All solutions for the exercises are included, so you will always find the answers
- 2 Complete ACT Aspire Math Practice Tests that reflect the format and question types on ACT Aspire

ACT Aspire Math is a breakthrough in Math learning — offering a winning formula and the most powerful methods for learning basic Math topics confidently. Each section offers step–by–step instruction and helpful hints, with a few topics being tackled each chapter. Two complete REAL ACT Aspire Math tests are provided at the back of the book to refine your student's Math skills.

ACT Aspire Math **is the only book your student will ever need to master Basic Math topics!** It can be used as a self–study course – you do not need to work with a Math tutor. (It can also be used with a Math tutor).

Ideal for self–study as well as for classroom usage.

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: Real Numbers and Integers 11
Adding and Subtracting Integers 12
Multiplying and Dividing Integers 13
Ordering Integers and Numbers 14
Arrange, Order, and Comparing Integers 15
Order of Operations 16
Mixed Integer Computations 17
Integers and Absolute Value 18
Test Preparation 19
Answers of Worksheets – Chapter 1 21
Chapter 2: Proportions and Ratios 25
Simplifying Ratios 26
Similar Figures 27
Simple Interest 28
Ratio and Rates Word Problems 29
Test Preparation 30
Answers of Worksheets – Chapter 2 32
Chapter 3: Percent 34
Percentage Calculations 35
Converting Between Percent, Fractions, and Decimals 36
Percent Problems 37
Find What Percentage a Number Is of Another 38
Find a Percentage of a Given Number 39
Percent of Increase and Decrease 40
Markup, Discount, and Tax 41
Test Preparation 42
Answers of Worksheets – Chapter 3 44
Chapter 4: Algebraic Expressions 49
Expressions and Variables 50
Simplifying Variable Expressions 51
Simplifying Polynomial Expressions 52
Translate Phrases into an Algebraic Statement 53

The Distributive Property 54
Evaluating One Variable 55
Evaluating Two Variables 56
Combining like Terms 57
Test Preparation 58
Answers of Worksheets – Chapter 4 60
Chapter 5: Equations 63
One–Step Equations 64
One–Step Equation Word Problems 65
Two–Step Equations 66
Two–Step Equation Word Problems 67
Multi–Step Equations 68
Solving Systems of Equations by Elimination 69
Systems of Equations Word Problems 70
Test Preparation 71
Answers of Worksheets – Chapter 5 74
Chapter 6: Inequalities 78
Graphing Single–Variable Inequalities 79
One–Step Inequalities 80
Two–Step Inequalities 81
Multi–Step Inequalities 82
Test Preparation 83
Answers of Worksheets – Chapter 6 86
Chapter 7: Linear Functions 90
Finding Slope 91
Graphing Lines Using Slope–Intercept Form 92
Graphing Lines Using Standard Form 93
Writing Linear Equations 94
Graphing Linear Inequalities 95
Finding Midpoint 96
Finding Distance of Two Points 97
Slope and Rate of Change 98

Find the Slope, x–intercept and y–intercept 99
Write an Equation from a Graph 100
Slope–intercept Form 101
Point–slope Form 102
Equations of Horizontal and Vertical Lines 103
Equation of Parallel or Perpendicular Lines 104
Test Preparation 105
Answers of Worksheets – Chapter 7 107
Chapter 8: Monomials and Polynomials 115
Classifying Polynomials 116
Writing Polynomials in Standard Form 117
Simplifying Polynomials 118
Add and Subtract monomials 119
Multiplying Monomials 120
Multiplying and Dividing Monomials 121
GCF of Monomials 122
Powers of monomials 123
Multiplying a Polynomial and a Monomial 124
Multiplying Binomials 125
Factoring Trinomials 126
Test Preparation 127
Answers of Worksheets – Chapter 8 129
Chapter 9: Exponents and Radicals 134
Multiplication Property of Exponents 135
Division Property of Exponents 136
Powers of Products and Quotients 137
Zero and Negative Exponents 138
Negative Exponents and Negative Bases 139
Writing Scientific Notation 140
Square Roots 141
Test Preparation 142
Answers of Worksheets – Chapter 9 144
Chapter 10: Plane Figures 147

Transformations: Translations, Rotations, and Reflections 148
The Pythagorean Theorem 149
Area of Triangles 150
Perimeter of Polygons 151
Area and Circumference of Circles 152
Area of Squares, Rectangles, and Parallelograms 153
Area of Trapezoids 154
Test Preparation 155
Answers of Worksheets – Chapter 10 157
Chapter 11: Solid Figures 159
Volume of Cubes 160
Volume of Rectangle Prisms 161
Surface Area of Cubes 162
Surface Area of a Rectangle Prism 163
Volume of a Cylinder 164
Surface Area of a Cylinder 165
Test Preparation 166
Answers of Worksheets – Chapter 11 167
Chapter 12: Statistics and Probability 169
Mean, Median, Mode, and Range of the Given Data 170
The Pie Graph or Circle Graph 171
Probability of Simple Events 172
Factorials 173
Test Preparation 174
Answers of Worksheets – Chapter 12 176
ACT Aspire Math Practice Tests 178
ACT Aspire Math Practice Tests Answers and Explanations 213

Chapter 1: Real Numbers and Integers

Topics that you'll learn in this chapter:

- ✓ Adding and Subtracting Integers
- ✓ Multiplying and Dividing Integers
- ✓ Ordering Integers and Numbers
- ✓ Arrange and Order, Comparing Integers
- ✓ Order of Operations
- ✓ Mixed Integer Computations
- ✓ Integers and Absolute Value

Adding and Subtracting Integers

Helpful Hints

- **Integers:** {… , –3, –2, –1, 0, 1, 2, 3, …}
  Includes: zero, counting numbers, and the negative of the counting numbers.

– Add a positive integer by moving to the right on the number line.

– Add a negative integer by moving to the left on the number line.

– Subtract an integer by adding its opposite.

Example:

12 + 10 = 22

25 – 13 = 12

(–24) + 12 = –12

(–14) + (–12) = –26

14 – (–13) = 27

Find the sum.

1) (– 12) + (– 4)

2) 5 + (– 24)

3) (– 14) + 23

4) (– 8) + (39)

5) 43 + (–12)

6) (– 23) + (– 4) + 3

7) 4 + (– 12) + (– 10) + (– 25)

8) 19 + (– 15) + 25 + 11

9) (– 9) + (– 12) + (32 – 14)

10) 4 + (– 30) + (45 – 34)

Find the difference.

11) (– 14) – (– 9) – (18)

12) (– 9) – (– 25)

13) (– 12) – (8)

14) (28) – (– 4)

15) (34) – (2)

16) (55) – (– 5) + (– 4)

17) (9) – (2) – (– 5)

18) (2) – (4) – (– 15)

19) (23) – (4) – (– 34)

20) (– 45) – (– 87)

Multiplying and Dividing Integers

Helpful Hints

(negative) × (negative) = positive

(negative) ÷ (negative) = positive

(negative) × (positive) = negative

(negative) ÷ (positive) = negative

(positive) × (positive) = positive

Examples:

3 × 2 = 6

3 × – 3 = – 9

– 2 × – 2 = 4

10 ÷ 2 = 5

– 4 ÷ 2 = – 2

– 12 ÷ – 6 = 3

Find each product.

1) (– 8) × (– 2)

2) 3 × 6

3) (– 4) × 5 × (– 6)

4) 2 × (– 6) × (– 6)

5) 11 × (– 12)

6) 10 × (– 5)

7) 8 × 8

8) (– 8) × (– 9)

9) 6 × (– 5) × 3

10) 6 × (– 1) × 2

Find each quotient.

11) 18 ÷ 3

12) (– 24) ÷ 4

13) (– 63) ÷ (– 9)

14) 54 ÷ 9

15) 20 ÷ (– 2)

16) (– 66) ÷ (– 11)

17) 64 ÷ 8

18) (– 121) ÷ 11

19) 72 ÷ 9

20) 16 ÷ 4

Ordering Integers and Numbers

Helpful Hints	To compare numbers, you can use number line! as you move from left to right on the number line, you find a bigger number!	**Example:** Order integers from least to greatest. (– 11, – 13, 7, – 2, 12) – 13 <– 11< – 2 < 7 <12

Order each set of integers from least to greatest.

1) – 15, – 19, 20, – 4, 1 ___, ___, ___, ___, ___, ___

2) 6, – 5, 4, – 3, 2 ___, ___, ___, ___, ___, ___

3) 15, – 42, 19, 0, – 22 ___, ___, ___, ___, ___, ___

4) 26, – 91, 0, – 13, 67, – 55 ___, ___, ___, ___, ___, ___

5) – 17, – 71, 90, – 25, – 54, – 39 ___, ___, ___, ___, ___, ___

6) 98, 5, 46, 19, 77, 24 ___, ___, ___, ___, ___, ___

Order each set of integers from greatest to least.

7) – 2, 5, – 3, 6, – 4 ___, ___, ___, ___, ___, ___

8) – 37, 7, – 17, 27, 47 ___, ___, ___, ___, ___, ___

9) 32, – 27, 19, – 17, 15 ___, ___, ___, ___, ___, ___

10) 68, 81, 21, – 18, 94, 72 ___, ___, ___, ___, ___, ___

Arrange, Order, and Comparing Integers

Helpful Hints	When using a number line, numbers increase as you move to the right.	**Examples:** 5 < 7, – 5 < – 2 – 18 < – 12

Arrange these integers in descending order.

1) 21, 71, – 18, – 10, 82 ___, ___, ___, ___, ___, ___

2) 15, 11, 20, 12, – 9, – 5 ___, ___, ___, ___, ___, ___

3) – 5, 20, 15, 9, –11 ___, ___, ___, ___, ___, ___

4) 19, 18, – 9, – 6, – 11 ___, ___, ___, ___, ___, ___

5) 56, – 34, – 12, – 5, 32 ___, ___, ___, ___, ___, ___

Compare. Use >, =, <

6) – 8 ____ 12

7) – 10 ____–16

8) 43 ____ 34

9) 15 ____ –16

10) – 354 ____ –345

11) – 56 ____ – 58

12) 78 ____ 87

13) – 92 ____ – 102

14) – 12 ____ – 12

15) – 721 ____ – 821

Order of Operations

Helpful Hints

- Use "order of operations" rule when there are more than one math operation.
- PEMDAS (parentheses / exponents / multiply / divide / add / subtract)

Example:

$(12 + 4) \div (-4) = -4$

Evaluate each expression.

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

2) $24 - (3 \times 3)$

3) $(6 \times 4) + 8$

4) $25 - (4 \times 2)$

5) $(6 \times 5) + 3$

6) $64 - (2 \times 4)$

7) $25 + (1 \times 8)$

8) $(6 \times 7) + 7$

9) $48 \div (4 + 4)$

10) $(7 + 11) \div (-2)$

11) $9 + (2 \times 5) + 10$

12) $(5 + 8) \times \frac{3}{5} + 2$

13) $2 \times 7 - (\frac{10}{9 - 4})$

14) $(12 + 2 - 5) \times 7 - 1$

15) $(\frac{7}{5 - 1}) \times (2 + 6) \times 2$

16) $20 \div (4 - (10 - 8))$

17) $\frac{50}{4\,(5 - 4) - 3}$

18) $2 + (8 \times 2)$

Mixed Integer Computations

Helpful Hints	**It worth remembering:**	**Example:**
	(negative) × (negative) = positive	
	(negative) ÷ (negative) = positive	(–5) + 6 = 1
	(negative) × (positive) = negative	(–3) × (–2) = 6
	(negative) ÷ (positive) = negative	(9) ÷ (–3) = – 3
	(positive) × (positive) = positive	

Compute.

1) (– 70) ÷ (– 5)

2) (– 14) × 3

3) (– 4) × (– 15)

4) (– 65) ÷ 5

5) 18 × (– 7)

6) (– 12) × (– 2)

7) $\frac{(-60)}{(-20)}$

8) 24 ÷ (– 8)

9) 22 ÷ (– 11)

10) $\frac{(-27)}{3}$

11) 4 × (– 4)

12) $\frac{(-48)}{12}$

13) (– 14) × (– 2)

14) (– 7) × (7)

15) $\frac{-30}{-6}$

16) (– 54) ÷ 6

17) (– 60) ÷ (– 5)

18) (– 7) × (– 12)

19) (– 14) × 5

20) 88 ÷ (– 8)

Integers and Absolute Value

Helpful Hints	To find an absolute value of a number, just find it's distance from 0!	**Example:** $\|-6\| = 6$ $\|6\| = 6$ $\|-12\| = 12$ $\|12\| = 12$

Write absolute value of each number.

1) – 4
2) – 7
3) – 8
4) 4
5) 5
6) – 10
7) 1
8) 6
9) 8
10) – 2
11) – 1
12) 10
13) 3
14) 7
15) – 5
16) – 3
17) – 9
18) 2
19) 4
20) – 6
21) 9

Evaluate.

22) $|-43| - |12| + 10$
23) $76 + |-15 - 45| - |3|$
24) $30 + |-62| - 46$
25) $|32| - |-78| + 90$
26) $|-35 + 4| + 6 - 4$
27) $|-4| + |-11|$
28) $|-6 + 3 - 4| + |7 + 7|$
29) $|-9| + |-19| - 5$

Test Preparation

1) 5 less than twice a positive integer is 83. What is the integer?

A. 39

B. 41

C. 42

D. 44

2) $[6 \times (-24) + 8] - (-4) + [4 \times 5] \div 2 = ?$

Write your answer in the box below.

3) Three times the price of a laptop is equal to five times the price of a computer. If the price of laptop is $200 more than the computer, what is the price of the laptop?

A. 300

B. 500

C. 800

D. 1500