

Ace the ACT Math in 30 Days

The Ultimate Crash Course to Beat the ACT Math Test

Reza Nazari & Ava Ross

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By

Reza Nazari

& Ava Ross

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Description

The goal of this book is simple. It will help you incorporate the most effective method and the right strategies to prepare for the ACT Math test quickly and effectively.

Ace the ACT Math in 30 Days, which reflects the 2019 test guidelines and topics, is designed to help you hone your math skills, overcome your exam anxiety, and boost your confidence -- and do your best to defeat ACT Math Test. This ACT Math new edition has been updated to replicate questions appearing on the most recent ACT Math tests. This is a precious learning tool for ACT Math test takers who need extra practice in math to improve their ACT Math score. After reviewing this book, you will have solid foundation and adequate practice that is necessary to ace the ACT Math test. **This book is your ticket to ace the ACT Math!**

Ace the ACT Math in 30 Days provides students with the confidence and math skills they need to succeed on the ACT Math, providing 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.

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

- Content 100% aligned with the 2019 ACT test
- Written by ACT Math tutors and test experts
- Complete coverage of all ACT Math concepts and topics which you will be tested
- Step-by-step guide for all ACT Math topics
- Dynamic design and easy-to-follow activities
- Over 2,500 additional ACT math 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 ACT Math topics such as integers, percent, equations, polynomials, exponents and radicals
- 2 full-length practice tests (featuring new question types) with detailed answers

Effortlessly and confidently follow the step-by-step instructions in this book to ace the ACT Math in a short period of time.

ACT Math in 30 Days **is the only book you'll 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).

You'll be surprised how fast you master the Math topics covering on ACT Math Test.

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
– GRE 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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Day 1: Fractions

Math Topics that you'll learn today:

- ✓ Simplifying Fractions
- ✓ Adding and Subtracting Fractions
- ✓ Multiplying and Dividing Fractions

"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

Step-by-step guide:

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

Examples:

1) Simplify $\frac{12}{20}$.

To simplify $\frac{12}{20}$, find a number that both 12 and 20 are divisible by. Both are divisible by 4. Then: $\frac{12}{20} = \frac{12 \div 4}{20 \div 4} = \frac{3}{5}$

2) Simplify $\frac{64}{80}$.

To simplify $\frac{64}{80}$, find a number that both 64 and 80 are divisible by. Both are divisible by 8 and 16. Then: $\frac{64}{80} = \frac{64 \div 8}{80 \div 8} = \frac{8}{10}$, 8 and 10 are divisible by 2, then: $\frac{8}{10} = \frac{4}{5}$

or $\frac{64}{80} = \frac{64 \div 16}{80 \div 16} = \frac{4}{5}$

Simplify each fraction.

1) $\frac{9}{18} =$

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

3) $\frac{6}{8} =$

4) $\frac{5}{20} =$

5) $\frac{18}{24} =$

6) $\frac{6}{9} =$

7) $\frac{12}{15} =$

8) $\frac{4}{16} =$

9) $\frac{18}{36} =$

10) $\frac{6}{42} =$

11) $\frac{13}{39} =$

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

Adding and Subtracting Fractions

Step-by-step guide:

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

Examples:

1) Subtract fractions. $\frac{4}{5}-\frac{3}{5}=$

   For "like" fractions, subtract the numerators and write the answer over the common denominator. then: $\frac{4}{5}-\frac{3}{5}=\frac{1}{5}$

2) Subtract fractions. $\frac{2}{3}-\frac{1}{2}=$

   For "unlike" fractions, find equivalent fractions with the same denominator before you can add or subtract fractions with different denominators. Use this formula: $\frac{a}{b}-\frac{c}{d}=\frac{ad-cb}{bd}$

   $\frac{2}{3}-\frac{1}{2}=\frac{(2)(2)-(1)(3)}{3\times 2}=\frac{4-3}{6}=\frac{1}{6}$

Find the sum or difference.

1) $\frac{1}{3}+\frac{2}{3}=$
2) $\frac{1}{2}+\frac{1}{3}=$
3) $\frac{2}{5}+\frac{1}{2}=$
4) $\frac{3}{7}+\frac{2}{3}=$
5) $\frac{1}{2}-\frac{1}{3}=$
6) $\frac{4}{5}-\frac{2}{3}=$
7) $\frac{2}{3}-\frac{1}{6}=$
8) $\frac{3}{5}-\frac{1}{2}=$
9) $\frac{8}{9}-\frac{2}{5}=$

Multiplying and Dividing Fractions

Step-by-step guide:

- ✓ 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!

Examples:

1) Multiplying fractions. $\frac{5}{6} \times \frac{3}{4} =$

Multiply the top numbers and multiply the bottom numbers.
$\frac{5}{6} \times \frac{3}{4} = \frac{5\times3}{6\times4} = \frac{15}{24}$, simplify: $\frac{15}{24} = \frac{15\div3}{24\div3} = \frac{5}{8}$

2) Dividing fractions. $\frac{1}{4} \div \frac{2}{3} =$

Keep first fraction, change division sign to multiplication, and flip the numerator and denominator of the second fraction. Then: $\frac{1}{4} \times \frac{3}{2} = \frac{1\times3}{4\times2} = \frac{3}{8}$

Find the answers.

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

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

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

4) $\frac{1}{6} \times \frac{4}{5} =$

5) $\frac{1}{5} \times \frac{1}{4} =$

6) $\frac{2}{5} \times \frac{1}{2} =$

7) $\frac{1}{2} \div \frac{1}{4} =$

8) $\frac{1}{3} \div \frac{1}{2} =$

9) $\frac{2}{5} \div \frac{1}{3} =$

10) $\frac{1}{4} \div \frac{2}{3} =$

11) $\frac{1}{5} \div \frac{3}{10} =$

12) $\frac{2}{7} \div \frac{1}{3} =$

Answers of Worksheets – Day 1

Simplifying Fractions

1) $\frac{1}{2}$
2) $\frac{4}{5}$
3) $\frac{3}{4}$
4) $\frac{1}{4}$
5) $\frac{3}{4}$
6) $\frac{2}{3}$
7) $\frac{4}{5}$
8) $\frac{1}{4}$
9) $\frac{1}{2}$
10) $\frac{1}{7}$
11) $\frac{1}{3}$
12) $\frac{3}{4}$

Adding and Subtracting Fractions

1) $\frac{3}{3} = 1$
2) $\frac{5}{6}$
3) $\frac{9}{10}$
4) $\frac{23}{21}$
5) $\frac{1}{6}$
6) $\frac{2}{15}$
7) $\frac{1}{2}$
8) $\frac{1}{10}$
9) $\frac{22}{45}$

Multiplying and Dividing Fractions

1) $\frac{3}{8}$
2) $\frac{2}{5}$
3) $\frac{1}{10}$
4) $\frac{2}{15}$
5) $\frac{1}{20}$
6) $\frac{1}{5}$
7) 2
8) $\frac{2}{3}$
9) $\frac{6}{5}$
10) $\frac{3}{8}$
11) $\frac{2}{3}$
12) $\frac{6}{7}$

Day 2:

Mixed Numbers

Math Topics that you'll learn today:

- ✓ Adding Mixed Numbers
- ✓ Subtracting Mixed Numbers
- ✓ Multiplying Mixed Numbers
- ✓ Dividing Mixed Numbers

Mathematics is an art of human understanding. ~ William Thurston

Adding Mixed Numbers

Step-by-step guide:

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

- ✓ Add whole numbers of the mixed numbers.
- ✓ Add the fractions of each mixed number.
- ✓ Find the Least Common Denominator (LCD) if necessary.
- ✓ Add whole numbers and fractions.
- ✓ Write your answer in lowest terms.

Examples:

1) Add mixed numbers. $1\frac{3}{4}+2\frac{3}{8}=$

Rewriting our equation with parts separated, $1+\frac{3}{4}+2+\frac{3}{8}$, Solving the whole number parts $1+2=3$, Solving the fraction parts $\frac{3}{4}+\frac{3}{8}$, and rewrite to solve with the equivalent fractions.

$\frac{6}{8}+\frac{3}{8}=\frac{9}{8}=1\frac{1}{8}$, then Combining the whole and fraction parts $3+1+\frac{1}{8}=4\frac{1}{8}$

2) Add mixed numbers. $1\frac{2}{3}+4\frac{1}{6}=$

Rewriting our equation with parts separated, $1+\frac{2}{3}+4+\frac{1}{6}$, Solving the whole number parts $1+4=5$, Solving the fraction parts $\frac{2}{3}+\frac{1}{6}$, and rewrite to solve with the equivalent fractions.

$\frac{2}{3}+\frac{1}{6}=\frac{5}{6}$, then Combining the whole and fraction parts $5+\frac{5}{6}=5\frac{5}{6}$

Find the sum.

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

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

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

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

5) $1\frac{3}{7}+1\frac{5}{14}=$

6) $6\frac{5}{12}+3\frac{3}{4}=$

7) $5\frac{1}{2}+8\frac{3}{4}=$

8) $3\frac{7}{8}+3\frac{1}{3}=$

9) $3\frac{3}{9}+7\frac{6}{11}=$

Subtract Mixed Numbers

Step-by-step guide:

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

- ✓ Subtract the whole number of second mixed number from whole number of the first mixed number.
- ✓ Subtract the second fraction from the first one.
- ✓ Find the Least Common Denominator (LCD) if necessary.
- ✓ Add the result of whole numbers and fractions.
- ✓ Write your answer in lowest terms.

Examples:

1) Subtract. $5\frac{2}{3} - 2\frac{1}{4} =$

Rewriting our equation with parts separated, $5 + \frac{2}{3} - 2 - \frac{1}{4}$

Solving the whole number parts $5 - 2 = 3$, Solving the fraction parts, $\frac{2}{3} - \frac{1}{4} = \frac{8-3}{12} = \frac{5}{12}$

Combining the whole and fraction parts, $3 + \frac{5}{12} = 3\frac{5}{12}$

2) Subtract. $3\frac{4}{5} - 1\frac{1}{2} =$

Rewriting our equation with parts separated, $3 + \frac{4}{5} - 1 - \frac{1}{2}$

Solving the whole number parts $3 - 1 = 2$, Solving the fraction parts, $\frac{4}{5} - \frac{1}{2} = \frac{3}{10}$

Combining the whole and fraction parts, $2 + \frac{3}{10} = 2\frac{3}{10}$

Find the difference.

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

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

3) $5\frac{1}{2} - 2\frac{1}{4} =$

4) $6\frac{1}{6} - 5\frac{1}{3} =$

5) $8\frac{1}{2} - 1\frac{1}{10} =$

6) $9\frac{1}{2} - 2\frac{1}{4} =$

7) $9\frac{1}{5} - 5\frac{1}{6} =$

8) $14\frac{3}{10} - 13\frac{1}{3} =$

9) $19\frac{2}{3} - 11\frac{5}{8} =$