

Student Workbook

and Two Realistic GRE Math Tests

# GRE Math

# Exercise Book 2019

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

**2 full-length GRE Math practice tests with detailed answers**

Reza Nazari & Ava Ross

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# GRE Math Exercise Book

## *Student Workbook and Two Realistic*

## *GRE Math Tests*

**By**

Reza Nazari & Ava Ross

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Reza Nazari & Ava Ross

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## Description

**Get ready for the GRE Math Test with a PERFECT Math Workbook!**

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

The updated version of this hands-on workbook represents extensive exercises, math problems, sample GRE 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 GRE 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 GRE Math 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 GRE Math Test.

Separate math chapters offer a complete review of the GRE Math 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 GRE Math Test is with intensive practice in every math topic tested--and that's what you will get in ***GRE Math 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 GRE Math test. Not only does this all-inclusive workbook offer everything you will ever need to conquer GRE Math test, it also contains two full-length and realistic GRE Math tests that reflect the format and question types on the GRE to help you check your exam-readiness and identify where you need more practice.

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

- ✓ Content 100% aligned with the 2019 GRE test
- ✓ Written by GRE Math tutors and test experts
- ✓ Complete coverage of all GRE Math concepts and topics which you will be tested
- ✓ Over 2,500 additional GRE 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 GRE Math topics such as integers, percent, equations, polynomials, exponents and radicals
- ✓ 2 full-length practice tests (featuring new question types) with detailed answers

This GRE Math 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 GRE test.

**Do NOT take the GRE 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
**– 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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# Chapter 1:

# Fundamental and Building Blocks

**Topics that you'll practice in this chapter:**

- ✓ Simplifying Fractions
- ✓ Adding and Subtracting Fractions
- ✓ Multiplying and Dividing Fractions
- ✓ Adding and Subtract Mixed Numbers
- ✓ Multiplying and Dividing Mixed Numbers
- ✓ Adding and Subtracting Decimals
- ✓ Multiplying and Dividing Decimals
- ✓ Comparing Decimals
- ✓ Rounding Decimals
- ✓ 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

***Simplify each fraction to its lowest terms.***

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

13) $\frac{63}{77} =$

14) $\frac{36}{40} =$

15) $\frac{21}{63} =$

16) $\frac{30}{84} =$

17) $\frac{50}{125} =$

18) $\frac{72}{108} =$

19) $\frac{49}{112} =$

20) $\frac{240}{320} =$

21) $\frac{120}{150} =$

***Solve each problem.***

22) Which of the following fractions equal to $\frac{4}{5}$? ____

A. $\frac{64}{75}$ B. $\frac{92}{115}$ C. $\frac{60}{85}$ D. $\frac{160}{220}$

23) Which of the following fractions equal to $\frac{3}{7}$? ____

A. $\frac{63}{147}$ B. $\frac{75}{182}$ C. $\frac{54}{140}$ D. $\frac{39}{98}$

24) Which of the following fractions equal to $\frac{2}{9}$? ____

A. $\frac{84}{386}$ B. $\frac{52}{234}$ C. $\frac{96}{450}$ D. $\frac{112}{522}$

# Adding and Subtracting Fractions

***Find the sum.***

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

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

7) $\frac{5}{9}+\frac{1}{2}=$

8) $\frac{3}{5}+\frac{3}{8}=$

9) $\frac{5}{9}+\frac{3}{7}=$

10) $\frac{5}{11}+\frac{1}{4}=$

11) $\frac{3}{7}+\frac{1}{6}=$

12) $\frac{3}{14}+\frac{3}{4}=$

***Find the difference.***

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

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

15) $\frac{2}{3}-\frac{1}{6}=$

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

17) $\frac{8}{9}-\frac{2}{5}=$

18) $\frac{4}{7}-\frac{1}{9}=$

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

20) $\frac{5}{8}-\frac{2}{6}=$

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

22) $\frac{7}{20}-\frac{1}{5}=$

23) $\frac{3}{18}-\frac{1}{12}=$

24) $\frac{9}{24}-\frac{3}{16}=$

25) $\frac{3}{7}-\frac{2}{5}=$

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

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

28) $\frac{5}{12}-\frac{2}{9}=$

29) $\frac{2}{13}-\frac{3}{7}=$

30) $\frac{4}{11}-\frac{5}{8}=$

# Multiplying and Dividing Fractions

***Find the value of each expression in lowest terms.***

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

8) $\frac{5}{7} \times \frac{3}{8} =$

9) $\frac{8}{9} \times \frac{6}{7} =$

10) $\frac{5}{6} \times \frac{3}{5} =$

11) $\frac{3}{8} \times \frac{1}{9} =$

12) $\frac{1}{12} \times \frac{3}{7} =$

***Find the value of each expression in lowest terms.***

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

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

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

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

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

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

19) $\frac{3}{5} \div \frac{5}{9} =$

20) $\frac{2}{23} \div \frac{2}{9} =$

21) $\frac{4}{13} \div \frac{1}{4} =$

22) $\frac{9}{14} \div \frac{3}{7} =$

23) $\frac{8}{15} \div \frac{2}{5} =$

24) $\frac{2}{9} \div \frac{7}{11} =$

25) $\frac{2}{5} \div \frac{3}{4} =$

26) $\frac{4}{11} \div \frac{2}{5} =$

27) $\frac{2}{15} \div \frac{5}{8} =$

28) $\frac{3}{10} \div \frac{2}{5} =$

29) $\frac{4}{5} \div \frac{3}{7} =$

30) $\frac{2}{11} \div \frac{3}{5} =$

# Adding and Subtracting Mixed Numbers

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

10) $7\frac{5}{12}+4\frac{3}{10}=$

***Find the difference.***

11) $3\frac{1}{3}-1\frac{1}{3}=$

12) $4\frac{1}{2}-3\frac{1}{2}=$

13) $5\frac{1}{2}-2\frac{1}{4}=$

14) $6\frac{1}{6}-5\frac{1}{3}=$

15) $8\frac{1}{2}-1\frac{1}{10}=$

16) $9\frac{1}{2}-2\frac{1}{4}=$

17) $9\frac{1}{5}-5\frac{1}{6}=$

18) $14\frac{3}{10}-13\frac{1}{3}=$

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

20) $20\frac{3}{4}-14\frac{2}{3}=$

21) $2\frac{1}{2}-1\frac{1}{5}=$

22) $3\frac{1}{6}-1\frac{1}{10}=$

23) $16\frac{2}{7}-11\frac{2}{3}=$

24) $15\frac{1}{7}-10\frac{1}{8}=$

25) $12\frac{3}{4}-7\frac{1}{3}=$

26) $15\frac{2}{5}-5\frac{2}{3}=$

# Multiplying and Dividing Mixed Numbers

**Find the product.**

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

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

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

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

5) $3\frac{4}{7} \times 2\frac{3}{5} =$

6) $7\frac{2}{3} \times 2\frac{2}{3} =$

7) $9\frac{8}{9} \times 8\frac{3}{4} =$

8) $2\frac{4}{7} \times 5\frac{2}{9} =$

9) $5\frac{2}{5} \times 2\frac{3}{5} =$

10) $3\frac{5}{7} \times 3\frac{5}{6} =$

**Find the quotient.**

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

12) $2\frac{1}{4} \div 1\frac{1}{2} =$

13) $10\frac{1}{2} \div 1\frac{2}{3} =$

14) $3\frac{1}{6} \div 4\frac{2}{3} =$

15) $4\frac{1}{8} \div 2\frac{1}{2} =$

16) $2\frac{1}{10} \div 2\frac{3}{5} =$

17) $1\frac{4}{11} \div 1\frac{1}{4} =$

18) $9\frac{1}{2} \div 9\frac{2}{3} =$

19) $8\frac{3}{4} \div 2\frac{2}{5} =$

20) $12\frac{1}{2} \div 9\frac{1}{3} =$

21) $2\frac{1}{8} \div 1\frac{1}{2} =$

22) $1\frac{1}{10} \div 1\frac{3}{5} =$

23) $5\frac{2}{5} \div 1\frac{3}{4} =$

24) $5\frac{1}{2} \div 2\frac{2}{3} =$

25) $3\frac{3}{4} \div 1\frac{1}{5} =$

26) $3\frac{1}{2} \div 1\frac{1}{3} =$

# Adding and Subtracting Decimals

***Add and subtract decimals.***

1) $\begin{array}{r} 31.13 \\ -\ 11.45 \\ \hline \end{array}$

2) $\begin{array}{r} 35.25 \\ +\ 24.47 \\ \hline \end{array}$

3) $\begin{array}{r} 73.50 \\ +\ 22.78 \\ \hline \end{array}$

4) $\begin{array}{r} 56.67 \\ -\ 44.39 \\ \hline \end{array}$

5) $\begin{array}{r} 71.47 \\ +\ 16.25 \\ \hline \end{array}$

6) $\begin{array}{r} 68.99 \\ -\ 53.61 \\ \hline \end{array}$

7) $\begin{array}{r} 66.24 \\ -\ 23.11 \\ \hline \end{array}$

8) $\begin{array}{r} 39.75 \\ +\ 12.85 \\ \hline \end{array}$

9) $\begin{array}{r} 229.25 \\ -\ 84.67 \\ \hline \end{array}$

***Find the missing number.***

10) $___ + 2.5 = 3.9$

11) $1.7 + ___ = 4.98$

12) $5.25 + ___ = 7$

13) $6.55 - ___ = 2.45$

14) $___ - 3.98 = 5.32$

15) $___ - 11.67 = 14.48$

16) $12.35 + ___ = 14.78$

17) $___ - 23.89 = 13.90$

18) $___ + 17.28 = 19.56$

19) $77.90 + ___ = 102.60$

# Multiplying and Dividing Decimals

***Find the product.***

1) $0.5 \times 0.4 =$

2) $2.5 \times 0.2 =$

3) $1.25 \times 0.5 =$

4) $0.75 \times 0.2 =$

5) $1.92 \times 0.8 =$

6) $0.55 \times 0.4 =$

7) $3.24 \times 1.2 =$

8) $12.5 \times 4.2 =$

9) $22.6 \times 8.2 =$

10) $17.2 \times 4.5 =$

11) $25.1 \times 12.5 =$

12) $33.2 \times 2.2 =$

***Find the quotient.***

13) $1.67 \div 100 =$

14) $52.2 \div 1{,}000 =$

15) $4.2 \div 2 =$

16) $8.6 \div 0.5 =$

17) $12.6 \div 0.2 =$

18) $16.5 \div 5 =$

19) $13.25 \div 100 =$

20) $25.6 \div 0.4 =$

21) $28.24 \div 0.1 =$

22) $34.16 \div 0.25 =$

23) $44.28 \div 0.5 =$

24) $38.78 \div 0.02 =$

# Comparing Decimals

***Write the correct comparison symbol (>, < or =).***

1) 0.50 ☐ 0.050

2) 0.025 ☐ 0.25

3) 2.060 ☐ 2.07

4) 1.75 ☐ 1.07

5) 4.04 ☐ 0.440

6) 3.05 ☐ 3.5

7) 5.05 ☐ 5.050

8) 1.02 ☐ 1.1

9) 2.45 ☐ 2.125

10) 0.932 ☐ 0.0932

11) 3.15 ☐ 3.150

12) 0.718 ☐ 0.89

13) 7.060 ☐ 7.60

14) 3.59 ☐ 3.129

15) 4.33 ☐ 4.319

16) 2.25 ☐ 2.250

17) 1.95 ☐ 1.095

18) 8.051 ☐ 8.50

19) 1.022 ☐ 1.020

20) 3.77 ☐ 3.770