2018 - 2019

Grade 7

Georgia Milestones Math Workbook

A Comprehensive Review and Step-by-Step Guide to Preparing for the Georgia Milestones Test

- Targeted, skill-building practices
- Step-by-Step guide for all Math topics
- 2 Complete Georgia Milestones Practice Tests

Reza Nazari & Ava Ross

Let's Keep in Touch

Follow Us Online

Visit US at

www.EffortlessMath.com

https://www.facebook.com/Effortlessmath

https://goo.gl/2B6qWW

Online Math Lessons

It's easy! Here's how it works.

1- Request a FREE introductory session.

2- Meet a Math tutor online.

3- Start Learning Math in Minutes.

Send Email to: info@EffortlessMath.com

www.EffortlessMath.com

… So Much More Online!

- **FREE Math lessons**
- **More Math learning books!**
- **Online Math Tutors**

Looking for an Online Math Tutor?

Send Email to: info@EffortlessMath.com

Grade 7

Georgia Milestones Assessment System Mathematics Workbook 2018 – 2019

A Comprehensive Review and Step–by–Step Guide to

Preparing for the GMAS Math Test

By

Reza Nazari & Ava Ross

Copyright © 2018

Reza Nazari & Ava Ross

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Ac, without permission of the author.

All inquiries should be addressed to:

info@effortlessMath.com

www.EffortlessMath.com

ISBN-13: 978-1987766806

ISBN-10: 1987766806

Published by: Effortless Math Education

www.EffortlessMath.com

Description

Grade 7 Georgia Milestones Assessment System Workbook is full of specific and detailed material that will be key to succeeding on the GMAS Math. It's filled with the critical math concepts a student will need in order to do well on 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.

This comprehensive Math workbook brings together everything a student needs to know for the GMAS Math section. It is designed to address the needs of GMAS test takers who must have a working knowledge of basic Math. It contains most common sample questions that are most likely to appear in the mathematics section of the GMAS. This book leaves no stones unturned!

GMAS Mathematics Workbook with over 2,500 sample questions and 2 complete GMAS tests is all a student needs to fully prepare for the GMAS Math. It will help the student learns everything they need to ace the math section of the GMAS.

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

Inside the pages of this comprehensive 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
- Step–by–step guide for all Math topics
- Targeted, skill–building practices
- A fun, interactive and concrete learning process
- 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 GMAS Math Practice Tests that reflect the format and question types on GMAS

GMAS Mathematics Workbook is the ideal prep solution for any student who wants to prepare for the GMAS test. It efficiently and effectively reinforces learning outcomes through engaging questions and repeated practice, helping students to quickly master basic Math skills.

Effortless Math books have helped thousands of students prepare for standardized tests and achieve their education and career goals. This is done by setting high standards and preparing the best quality Mathematics learning books, and this book is no exception. It is the perfect study aid for the GMAS Math test. The student will definitely be well prepared for the test with this comprehensive 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:
reza@EffortlessMath.com

Find Reza's professional profile at:
goo.gl/zoC9rJ

Contents

Chapter 1: Arithmetic and Number Theory 15
1–1 Simplifying Fractions 16
1–2 Adding and Subtracting Fractions 17
1–3 Multiplying and Dividing Fractions 18
1–4 Adding and Subtracting Mixed Numbers 19
1–5 Multiplying and Dividing Mixed Numbers 20
1–6 Adding and Subtracting Decimals 21
1–7 Multiplying and Dividing Decimals 22
1–8 Converting Between Fractions, Decimals and Mixed Numbers 23
1–9 Rounding Numbers 24
1–10 Factoring Numbers 25
1–11 Prime Factorization 26
1–12 Greatest Common Factor 27
1–13 Least Common Multiple 28
1–14 Divisibility Rules 29
Answers of Worksheets – Chapter 1 30
Chapter 2: Real Numbers and Integers 36
2–1 Adding and Subtracting Integers 37
2–2 Multiplying and Dividing Integers 38
2–3 Ordering Integers and Numbers 39
2–4 Arrange, Order, and Comparing Integers 40
2–5 Order of Operations 41
2–6 Mixed Integer Computations 42
2–7 Absolute Value 43
2–8 Integers and Absolute Value 44
2–9 Classifying Real Numbers Venn Diagram 45
Answers of Worksheets – Chapter 2 46
Chapter 3: Proportions and Ratios 49
3–1 Writing Ratios 50
3–2 Simplifying Ratios 51

3–3 Proportional Ratios 52
3–4 Create a Proportion 53
3–5 Similar Figures 54
3–6 Similar Figure Word Problems 55
3–7 Ratio and Rates Word Problems 56
Answers of Worksheets – Chapter 3 57
Chapter 4: Percent 60
4–1 Converting Between Percent, Fractions, and Decimals 61
4–2 Percentage Calculations 62
4–3 Find What Percentage a Number Is of Another 63
4–4 Find a Percentage of a Given Number 64
4–5 Percent Problems 65
4–6 Percent of Increase and Decrease 66
4–7 Markup, Discount, and Tax 67
Answers of Worksheets – Chapter 4 68
Chapter 5: Algebraic Expressions 70
5–1 Expressions and Variables 71
5–2 Simplifying Variable Expressions 72
5–3 The Distributive Property 73
5–4 Translate Phrases into an Algebraic Statement 74
5–5 Evaluating One Variable 75
5–6 Evaluating Two Variables 76
5–7 Combining like Terms 77
5–8 Simplifying Polynomial Expressions 78
Answers of Worksheets – Chapter 5 79
Chapter 6: Equations 82
6–1 One–Step Equations 83
6–2 One–Step Equation Word Problems 84
6–3 Two–Step Equations 85
6–4 Two–Step Equation Word Problems 86
6–5 Multi–Step Equations 87

Answers of Worksheets – Chapter 6 88
Chapter 7: Systems of Equations 90
7–1 Solving Systems of Equations by Graphing 91
7–2 Solving Systems of Equations by Substitution 92
7–3 Solving Systems of Equations by Elimination 93
7–4 Systems of Equations Word Problems 94
Answers of Worksheets – Chapter 7 95
Chapter 8: Inequalities 97
8–1 Graphing Single – Variable Inequalities 98
8–2 One–Step Inequalities 99
8–3 Two–Step Inequalities 100
8–4 Multi–Step Inequalities 101
Answers of Worksheets – Chapter 8 102
Chapter 9: Linear Functions 105
9–1 Finding Slope 106
9–2 Graphing Lines Using Slope–Intercept Form 107
9–3 Graphing Lines Using Standard Form 108
9–4 Writing Linear Equations 109
9–5 Graphing Linear Inequalities 110
Answers of Worksheets – Chapter 9 111
Chapter 10: Exponents and Radicals 114
10–1 Multiplication Property of Exponents 115
10–2 Division Property of Exponents 116
10–3 Powers of Products and Quotients 117
10–4 Zero and Negative Exponents 118
10–5 Negative Exponents and Negative Bases 119
10–6 Writing Scientific Notation 120
10–7 Square Roots 121
Answers of Worksheets – Chapter 10 122
Chapter 11: Plane Figures 125
11–1 Transformations: Translations, Rotations, and Reflections 126

11–2 The Pythagorean Theorem 127
11–3 Area of Triangles 128
11–4 Perimeter of Polygons 129
11–5 Area and Circumference of Circles 130
11–6 Area of Squares, Rectangles, and Parallelograms 131
11–7 Area of Trapezoids 132
Answers of Worksheets – Chapter 11 133
Chapter 12: Solid Figures 135
12 –1 Volume of Cubes and Rectangle Prisms 136
12 –2 Surface Area of Cubes 137
12 –3 Surface Area of a Prism 138
Answers of Worksheets – Chapter 12 139
Chapter 13: Statistics 140
13 –1 Mean, Median, Mode, and Range of the Given Data 141
13 –2 First Quartile, Second Quartile and Third Quartile of the Given Data 142
13 –3 Bar Graph 143
13 –4 Box and Whisker Plots 144
13 –5 Stem–And–Leaf Plot 145
13 –6 The Pie Graph or Circle Graph 146
13 –7 Scatter Plots 147
Answers of Worksheets – Chapter 13 148
Georgia Milestones Assessment System Mathematics Practice Test 1 153
Georgia Milestones Assessment System Mathematics Practice Test 2 168
GMAS Practice Tests Answer keys 187

Chapter 1: Arithmetic and Number Theory

1–1 Simplifying Fractions

1–2 Adding and Subtracting Fractions

1–3 Multiplying and Dividing Fractions

1–4 Adding and Subtracting Mixed Numbers

1–5 Multiplying and Dividing Mixed Numbers

1–6 Adding and Subtracting Decimals

1–7 Multiplying and Dividing Decimals

1–8 Converting Between Fractions, Decimals and Mixed Numbers

1–9 Rounding Numbers

1–10 Factoring Numbers

1–11 Prime Factorization

1–12 Greatest Common Factor

1–13 Least Common Multiple

1–14 Divisibility Rules

1–1 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) $\frac{25}{45}$

1–2 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) $\frac{1}{2}-\frac{1}{9}$

1–3 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) $\frac{5}{14} \div \frac{9}{10}$

1–4 Adding and Subtracting 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:

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

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

Add.

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

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

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

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

Subtract.

13) $4\frac{1}{2} - 3\frac{1}{2}$

14) $3\frac{3}{8} - 3\frac{1}{8}$

15) $6\frac{3}{5} - 5\frac{1}{5}$

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

17) $6\frac{1}{6} - 5\frac{1}{2}$

18) $3\frac{1}{3} - 1\frac{1}{3}$

19) $2\frac{10}{11} - 1\frac{1}{3}$

20) $2\frac{1}{2} - 1\frac{1}{2}$

21) $6\frac{3}{5} - 2\frac{1}{5}$

22) $7\frac{2}{5} - 1\frac{1}{5}$

23) $2\frac{5}{7} - 1\frac{1}{3}$

24) $2\frac{1}{4} - 1\frac{1}{2}$

1–5 Multiplying and Dividing Mixed Numbers

Helpful Hints

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

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

Example:

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

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

$4\frac{1}{4} \div 2\frac{2}{3} = 1\frac{19}{32}$

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

Find each quotient.

13) $2\frac{1}{5} \div 2\frac{1}{2}$
14) $2\frac{3}{5} \div 1\frac{1}{3}$
15) $3\frac{1}{6} \div 4\frac{2}{3}$
16) $1\frac{2}{3} \div 3\frac{1}{3}$
17) $4\frac{1}{8} \div 2\frac{2}{4}$
18) $3\frac{1}{2} \div 2\frac{3}{5}$
19) $3\frac{5}{9} \div 1\frac{2}{5}$
20) $2\frac{2}{7} \div 1\frac{1}{2}$
21) $3\frac{1}{5} \div 1\frac{1}{2}$
22) $4\frac{3}{5} \div 2\frac{1}{3}$
23) $6\frac{1}{6} \div 1\frac{2}{3}$
24) $2\frac{2}{3} \div 1\frac{1}{3}$