2018 - 2019

Grade 7

PARCC

Math Workbook

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

- Targeted, skill-building practices
- Step-by-Step guide for all Math topics
- 2 Complete PARCC 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 PARCC Mathematics Workbook 2018 – 2019

A Comprehensive Review and Step–by–Step Guide to

Preparing for the PARCC 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: 978-1987766820

ISBN-10: 1987766822

Published by: Effortless Math Education

www.EffortlessMath.com

Description

Grade 7 PARCC Mathematics Workbook is full of specific and detailed material that will be key to succeeding on the PARCC 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 PARCC Math section. It is designed to address the needs of PARCC 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 PARCC. This book leaves no stones unturned!

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

This workbook includes practice test questions. It contains easy–to–read essential summaries that highlight the key areas of the PARCC Math test. Effortless Math test study guide reviews the most important components of the PARCC Math test. Anyone planning to take the PARCC 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 PARCC Math Practice Tests that reflect the format and question types on PARCC

PARCC Mathematics Workbook is the ideal prep solution for any student who wants to prepare for the PARCC 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 PARCC 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 14
1–1 Simplifying Fractions 15
1–2 Adding and Subtracting Fractions 16
1–3 Multiplying and Dividing Fractions 17
1–4 Adding and Subtracting Mixed Numbers 18
1–5 Multiplying and Dividing Mixed Numbers 19
1–6 Adding and Subtracting Decimals 20
1–7 Multiplying and Dividing Decimals 21
1–8 Converting Between Fractions, Decimals and Mixed Numbers 22
1–9 Rounding Numbers 23
1–10 Factoring Numbers 24
1–11 Prime Factorization 25
1–12 Greatest Common Factor 26
1–13 Least Common Multiple 27
1–14 Divisibility Rules 28
Answers of Worksheets – Chapter 1 29
Chapter 2: Real Numbers and Integers 35
2–1 Adding and Subtracting Integers 36
2–2 Multiplying and Dividing Integers 37
2–3 Ordering Integers and Numbers 38
2–4 Arrange, Order, and Comparing Integers 39
2–5 Order of Operations 40
2–6 Mixed Integer Computations 41
2–7 Absolute Value 42
2–8 Integers and Absolute Value 43
2–9 Classifying Real Numbers Venn Diagram 44
Answers of Worksheets – Chapter 2 45
Chapter 3: Proportions and Ratios 48
3–1 Writing Ratios 49
3–2 Simplifying Ratios 50

3–3 Proportional Ratios 51
3–4 Create a Proportion 52
3–5 Similar Figures 53
3–6 Similar Figure Word Problems 54
3–7 Ratio and Rates Word Problems 55
Answers of Worksheets – Chapter 3 56
Chapter 4: Percent 59
4–1 Converting Between Percent, Fractions, and Decimals 60
4–2 Percentage Calculations 61
4–3 Find What Percentage a Number Is of Another 62
4–4 Find a Percentage of a Given Number 63
4–5 Percent Problems 64
4–6 Percent of Increase and Decrease 65
4–7 Markup, Discount, and Tax 66
Answers of Worksheets – Chapter 4 67
Chapter 5: Algebraic Expressions 69
5–1 Expressions and Variables 70
5–2 Simplifying Variable Expressions 71
5–3 The Distributive Property 72
5–4 Translate Phrases into an Algebraic Statement 73
5–5 Evaluating One Variable 74
5–6 Evaluating Two Variables 75
5–7 Combining like Terms 76
5–8 Simplifying Polynomial Expressions 77
Answers of Worksheets – Chapter 5 78
Chapter 6: Equations 81
6–1 One–Step Equations 82
6–2 One–Step Equation Word Problems 83
6–3 Two–Step Equations 84
6–4 Two–Step Equation Word Problems 85
6–5 Multi–Step Equations 86

Answers of Worksheets – Chapter 6 87
Chapter 7: Systems of Equations 89
7–1 Solving Systems of Equations by Graphing 90
7–2 Solving Systems of Equations by Substitution 91
7–3 Solving Systems of Equations by Elimination 92
7–4 Systems of Equations Word Problems 93
Answers of Worksheets – Chapter 7 94
Chapter 8: Inequalities 96
8–1 Graphing Single – Variable Inequalities 97
8–2 One–Step Inequalities 98
8–3 Two–Step Inequalities 99
8–4 Multi–Step Inequalities 100
Answers of Worksheets – Chapter 8 101
Chapter 9: Linear Functions 104
9–1 Finding Slope 105
9–2 Graphing Lines Using Slope–Intercept Form 106
9–3 Graphing Lines Using Standard Form 107
9–4 Writing Linear Equations 108
9–5 Graphing Linear Inequalities 109
Answers of Worksheets – Chapter 9 110
Chapter 10: Exponents and Radicals 113
10–1 Multiplication Property of Exponents 114
10–2 Division Property of Exponents 115
10–3 Powers of Products and Quotients 116
10–4 Zero and Negative Exponents 117
10–5 Negative Exponents and Negative Bases 118
10–6 Writing Scientific Notation 119
10–7 Square Roots 120
Answers of Worksheets – Chapter 10 121
Chapter 11: Plane Figures 124
11–1 Transformations: Translations, Rotations, and Reflections 125

11–2 The Pythagorean Theorem 126
11–3 Area of Triangles 127
11–4 Perimeter of Polygons 128
11–5 Area and Circumference of Circles 129
11–6 Area of Squares, Rectangles, and Parallelograms 130
11–7 Area of Trapezoids 131
Answers of Worksheets – Chapter 11 132
Chapter 12: Solid Figures 134
12 –1 Volume of Cubes and Rectangle Prisms 135
12 –2 Surface Area of Cubes 136
12 –3 Surface Area of a Prism 137
Answers of Worksheets – Chapter 12 138
Chapter 13: Statistics 139
13 –1 Mean, Median, Mode, and Range of the Given Data 140
13 –2 First Quartile, Second Quartile and Third Quartile of the Given Data 141
13 –3 Bar Graph 142
13 –4 Box and Whisker Plots 143
13 –5 Stem–And–Leaf Plot 144
13 –6 The Pie Graph or Circle Graph 145
13 –7 Scatter Plots 146
Answers of Worksheets – Chapter 13 147
PARCC Practice Test 1 152
PARCC Practice Test 2 174
PARCC Practice Tests Answer keys 200

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.

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

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

1–6 Adding and Subtracting Decimals

Helpful Hints

1– Line up the numbers.
2– Add zeros to have same number of digits for both numbers.
3– Add or Subtract using column addition or subtraction.

Example:

$$\begin{array}{r} 16.18 \\ -\ 13.45 \\ \hline 2.73 \end{array}$$

Add and subtract decimals.

1) $\begin{array}{r} 15.14 \\ -\ 12.18 \\ \hline \end{array}$

2) $\begin{array}{r} 65.72 \\ +\ 43.67 \\ \hline \end{array}$

3) $\begin{array}{r} 82.56 \\ +\ 12.28 \\ \hline \end{array}$

4) $\begin{array}{r} 34.18 \\ -\ 23.45 \\ \hline \end{array}$

5) $\begin{array}{r} 90.37 \\ +\ 56.97 \\ \hline \end{array}$

6) $\begin{array}{r} 45.78 \\ -\ 23.39 \\ \hline \end{array}$

Solve.

7) ____ + 1.3 = 4.8

8) 4.2 + ____ = 11.6

9) 9.9 + ____ = 16

10) 6.9 + ____ = 16.4

11) ____ + 5.1 = 8.6

12) ____ + 7.9 = 15.2