2018 - 2019

Grade 8

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

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Grade 8 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

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Description

Grade 8 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.

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Chapter 1: Arithmetic and Number Theory

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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

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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

1–15 Classify Numbers

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