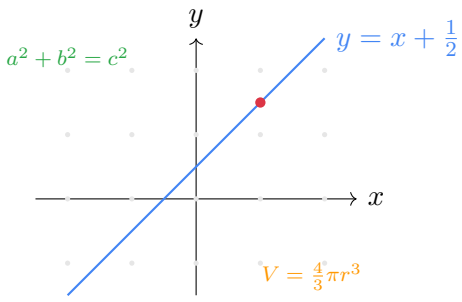
South Carolina SC READY

8th Grade Math Workbook

Comprehensive Practice, Challenging Exercises, and Strategic Guidance for Complete Test-Day Confidence



Reza Nazari

Copyrighted Material

Copyright © 2026

Effortless Math Education Inc

Published by Effortless Math Education

www.effortlessmath.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

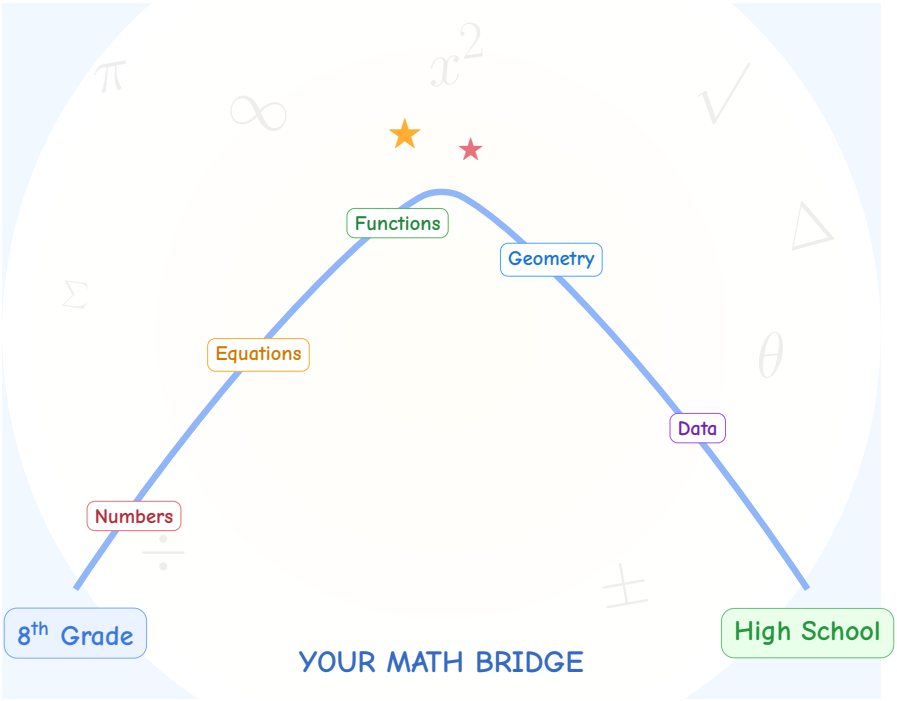
Test names and organizational names used herein are the property of their respective trademark holders.

Copyright © 2026

Copyrighted Material

Welcome, 8th Grader!

The Bridge Between Middle School and High School Starts Here



Dear Eighth Grader,

Welcome! This is *your* year. Everything you have built so far — working with fractions, decimals, ratios, and basic geometry — has been preparing you for this moment. Eighth-grade math is where all of those skills come together and open the door to high school and beyond.

8.MGSR.3.7	Describe the effect of a series of transformations, including dilations, translations, rotations, and reflections, on two-dimensional figures using coordinates on the coordinate plane

8.NR | South Carolina

Grade 8 expectations grouped under 8.NR.

8.NR.1	Translate among multiple representations of rational numbers
8.NR.1.1	Convert any form of a rational number to any other form including fractions (mixed numbers), decimals, and percentages
8.NR.2	Utilize real numbers in mathematical and real-world situations
8.NR.2.1	Compare real numbers and write statements usingis equal to(=),is not equal to($\neq$),is less than(<),is greater than(>),is greater than or equal to($\geq$), oris less than or equal to($\leq$)
8.NR.2.2	Classify and order the subsets of real numbers in the number system including natural, whole, integer, rational, and irrational numbers

8.PAFR | South Carolina

Grade 8 expectations grouped under 8.PAFR.

8.PAFR.1	Determine if a table, graph, verbal description, or equation represents a function and describe its characteristics
8.PAFR.1.1	Define an equation in slope-intercept form (y=mx+b) as being a linear function
8.PAFR.1.2	Identify and describe the constant rate of change and they-intercept of a linear function
8.PAFR.1.3	Determine if a graph, table, mapping, or verbal description is a function (linear or nonlinear) or not a function
8.PAFR.1.4	Describe the key features of given functions, includingdomain, range, intervals of increasing or decreasing, constant, discrete, continuous, andintercepts
8.PAFR.1.5	Use multiple representations including mappings, tables, graphs, verbal description, and equations (only when linear) of two functions to compare the functions and draw conclusions

8.PAFR.1.6	Translate among the multiple representations, including mappings, tables, graphs, verbal description, and equations (only when linear) of a function
8.PAFR.2	Write, simplify, and evaluate algebraic expressions; write and solve algebraic equations and inequalities
8.PAFR.2.1	Solve multi-step one-variable equations and inequalities with variables on both sides with rational coefficients
8.PAFR.2.2	Describe single-variable equations as having one solution, no solution, or an infinite number of solutions
8.PAFR.2.3	Identify the rate of change for a linear function as the slope of the line
8.PAFR.2.4	Explain why the slope,m, is the same between any two distinct points on a linear graph
8.PAFR.2.5	Given a table or a graph, identify the slope and they-intercept of a line and write a linear equation to express that line
8.PAFR.3	Apply mathematical patterns, properties, and algorithms to the set of rational numbers to find sums, differences, products, and quotients and to write equivalent expressions
8.PAFR.3.1	Analyze patterns of perfect squares and perfect cubes to evaluate square roots and cube roots. Limit to square roots less than or equal to 400 and cube roots less than or equal to 1,000
8.PAFR.3.2	Approximate non-perfect square roots and cube roots to nearest tenth. Limit to square roots less than or equal to 400 and cube roots less than or equal to 1,000
8.PAFR.3.3	Apply laws of exponents to simplify algebraic expressions involving no more than three variables and integer exponents

Table of Contents

★ 1 Real Numbers & Number Sense 14

★ 2 Exponents, Roots, & Scientific Notation 24

★ 3 Proportional Relationships & Slope 34

★ 4 Equations & Systems 42

★ 5 Functions: Foundations 54

★ 6 Functions: Models And Patterns 61

★ 7 Transformations & Similarity 69

★ 8 Geometry & Measurement 78

★ 9 Statistics and Probability 96

★ Test Overview 114

★ Test-Taking Strategies 117

★ Practice Test 1 120

★ Practice Test 2 138

★ Practice Test Answer Keys 157

★ Practice Test Answers and Explanations 159

★ Chapters Answers and Explanations 163

15. A walking trail runs along two straight segments. The first segment is $\sqrt{20}$ km and the second is π km. (a) Estimate $\sqrt{20}$ to the nearest tenth. (b) Using $\pi \approx 3.14$, estimate the total trail length. (c) If a hiker walks at 5 km/h, about how many minutes will the entire trail take? _____

16. A rectangular picture frame has dimensions $\sqrt{18}$ inches by $(2+\sqrt{5})$ inches. (a) Estimate each dimension to the nearest tenth. (b) Estimate the perimeter of the frame. (c) If framing material costs \$1.50 per inch, estimate the total cost. _____

17. The area of a circular garden is 50 m^2. (a) Using $A = \pi r^2$, solve for r in exact form. (b) Estimate r to the nearest tenth. (c) Estimate the circumference $C = 2\pi r$ to the nearest tenth of a metre. _____

Scan Me

★ Chapter 1 Answer Key ★

Real Numbers & Number Sense

Topic 1 • Rational and Irrational Numbers

1) 3
2) 7
3) -12
4) Rational
5) Irrational
6) Irrational
7) Rational
8) Irrational
9) Rational
10) Irrational
11) Irrational
12) 13
13) Irrational
14) Yes
15) Irrational
16) No
17) Rational; 8 ft
18) 4 rational
19) False

Topic 2 • Turning Repeating Decimals into Fractions

1) $\frac{5}{9}$
2) $\frac{2}{9}$
3) $\frac{8}{9}$
4) 1
5) $\frac{1}{9}$
6) $\frac{2}{3}$
7) $\frac{5}{11}$
8) $\frac{3}{11}$
9) $\frac{2}{11}$
10) $\frac{7}{11}$
11) $\frac{1}{11}$
12) $\frac{6}{11}$
13) $\frac{1}{7}$
14) $\frac{1}{6}$
15) 36 pieces
16) Yes—the repeating decimal *is* the fraction $\frac{8}{11}$
17) $0.\overline{6} = \frac{2}{3}$; total $= \frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$ cups
18) Both fractions are equal, but Eddie's is fully simplified: $\frac{5}{11}$
19) $\frac{1}{3} + \frac{2}{3} + \frac{5}{9} = \frac{14}{9} = 1\frac{5}{9}$ minutes

Topic 3 • Estimating Irrational Numbers

1) 3 and 4
2) 4 and 5
3) 5 and 6
4) 7 and 8
5) 8 and 9
6) 9 and 10
7) ≈ 2.4
8) ≈ 3.7
9) ≈ 5.5
10) ≈ 7.2
11) $\sqrt{3}$, 2, $\sqrt{5}$
12) $\sqrt{11}$
13) $8 < \sqrt{75} < 9$; closer to 9 since $\sqrt{75} \approx 8.66$
14) Drone A; $\sqrt{60} \approx 7.75 > 7.5$
15) Side ≈ 9.5 ft; fencing $\approx 4(9.5)(\$12) = \$456$
16) $\sqrt{113} \approx 10.6$ cm; need an 11 cm strip
17) 7.07 is more accurate; $7.07^2 = 49.9849 \approx 50$

Topic 4 • Estimating Expressions with Irrational Numbers

1) ≈ 6.28
2) ≈ 4.14
3) ≈ 5.64
4) ≈ 3.73
5) ≈ 4.42
6) 2
7) ≈ 6.21
8) ≈ 5.86
9) ≈ 1.86
10) ≈ 3.81
11) 5
12) ≈ 2.44
13) ≈ 9.4 m^2
14) Rope A; ≈ 0.55 m longer
15) Total $\approx 4.5 + 3.14 = 7.64$ km; time $\approx 7.64 \div 5 \times 60 \approx 92$ min
16) Perimeter $\approx 2(4.24 + 4.24) \approx 16.96$ in; cost $\approx \$25.44$
17) $r \approx 4.0$ m; $C \approx 25.1$ m

Answers and Explanations on page: 163

Full worked solutions for Chapter 1 are waiting there.

Scan Me