

6

RHODE ISLAND

RICAS

GRADE

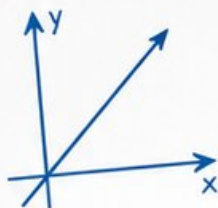
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED TESTS



2 ONLINE TESTS



USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



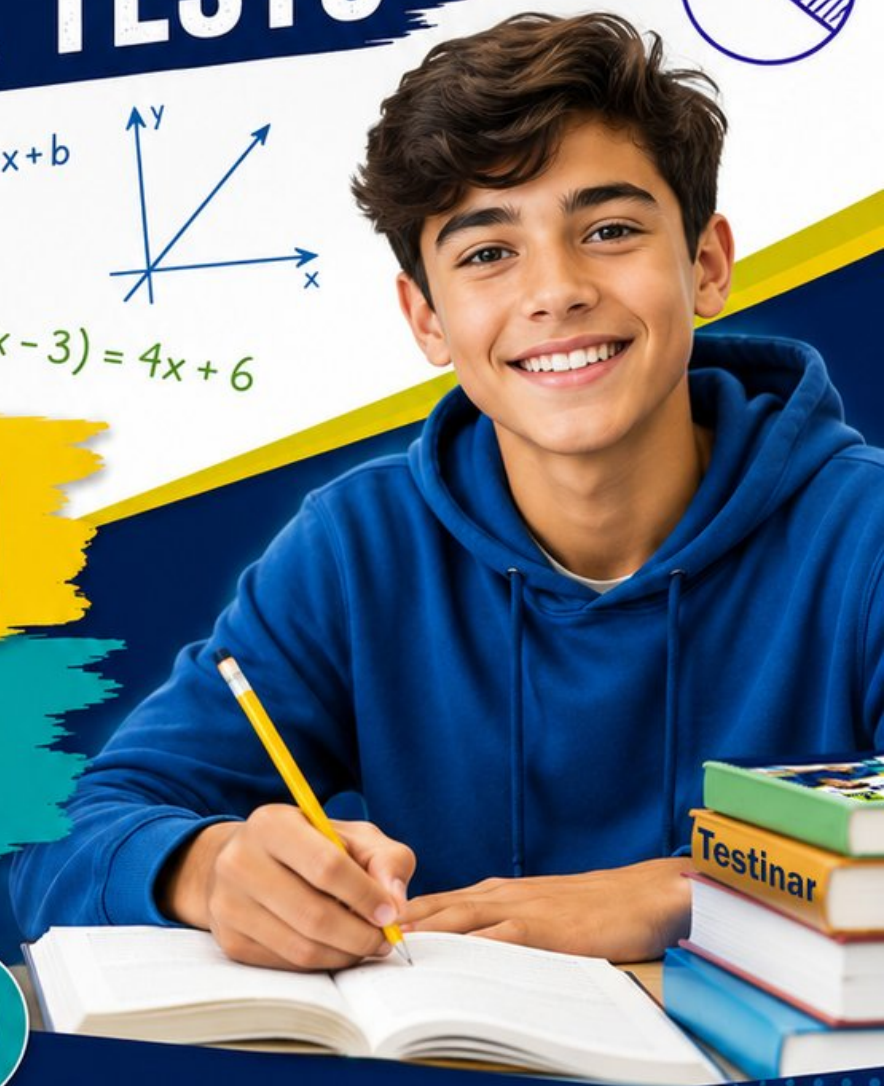
Strengthen
Math Skills



Detailed Answers
& Explanations

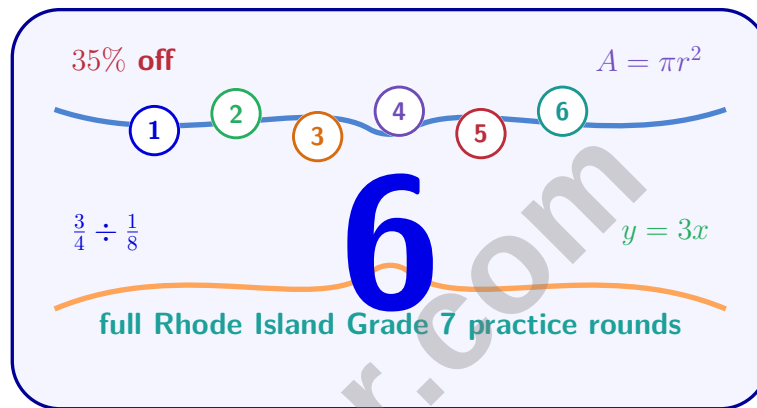


Improve Test
Performance



6 Rhode Island RICAS Grade 7 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Six complete 40-question Grade 7 RICAS practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Rhode Island Grade 7 Problem Solver!

Six focused rounds for sharper RICAS math thinking

This book gives you six full Grade 7 RICAS math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your Rhode Island Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A six-session plan for confident Grade 7 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Rhode Island review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Six RICAS tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1) A phone plan costs \$50 per month. With a promotional 5% reduction, the cost becomes $50 - 0.05(50)$. Rewrite this in the form $50(?)$.

☐ A. $50(0.95)$

☐ C. $50(1.05)$

☐ B. $50(0.05)$

☐ D. $50(1 - 0.05)$

2) Solve: $\frac{1}{2}x + 3 = 8$

☐ A. $x = 5$

☐ C. $x = 10$

☐ B. $x = 8$

☐ D. $x = 16$

3) A basketball player's scoring average was 18 points per game. After training, it increased to 27 points per game. What is the percent increase?

☐ A. 33.3%

☐ C. 66.7%

☐ B. 9%

☐ D. 50%

4) A die is rolled to simulate an event with probability $\frac{1}{3}$. Which outcomes on the die could represent a success?

☐ A. Rolling a 1 or 2

☐ C. Rolling a 1, 2, 3, or 4

☐ B. Rolling a 1 or 2 or 3

☐ D. Rolling a 1, 2, 3, 4, or 5

5) A bakery wants to estimate how often customers buy croissants. It surveys only customers who purchase items on a Thursday morning. What population is being studied?

☐ A. All customers of the bakery

☐ C. Customers who buy croissants

☐ B. Customers who shop on Thursday morning

☐ D. All people in the neighborhood



6) A coin is flipped and a six-sided die is rolled. How many outcomes are in the sample space?

☐ A. 6

☐ C. 12

☐ B. 8

☐ D. 36

7) A running club tracks weekly mileage for two runners over 5 weeks:

Runner	5-Week Data	Conclusion
Alex	10, 12, 11, 13, 9	Mean = 11, MAD = 1.2
Blake	5, 20, 10, 15, 10	Mean = 12, MAD = 4.0

Which interpretation is correct?

☐ A. Alex is more disciplined (consistent 11 mi/week)

☐ C. Both runners cover identical weekly distances

☐ B. Blake averages more miles per week

☐ D. Blake is more consistent

8) The circumference of a circle is 50.24 meters. Using $\pi \approx 3.14$, find the diameter.

9) A box plot for test scores shows: minimum = 55, $Q1 = 70$, median = 80, $Q3 = 88$, maximum = 98. About what percentage of students scored between 70 and 88?

☐ A. 25%

☐ C. 75%

☐ B. 50%

☐ D. 100%


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10) A fair coin is flipped twice. What is the probability of getting heads BOTH times?

- ☐ A. $\frac{1}{8}$
☐ B. $\frac{1}{4}$

- ☐ C. $\frac{1}{2}$
☐ D. $\frac{3}{4}$

11) A student conducted a survey of 240 students about their favorite lunch. The results:

Choice	Pizza	Burger	Salad	Pasta
Count	84	72	36	48

Based on experimental data, what is the probability a student chooses either pizza or pasta?

- ☐ A. $\frac{48}{240}$
☐ B. $\frac{84}{240}$

- ☐ C. $\frac{132}{240}$
☐ D. $\frac{156}{240}$

12) A stem-and-leaf plot of student heights (in cm) shows:

Stem	Leaves
14	8, 9
15	0, 2, 4, 6, 8
16	1, 3, 5, 7, 9
17	0, 2, 4

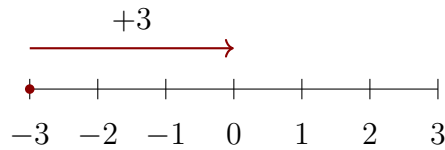
What is the mean of the data? (Rounded to nearest whole number)

- ☐ A. 158
☐ B. 159

- ☐ C. 160
☐ D. 161



1)

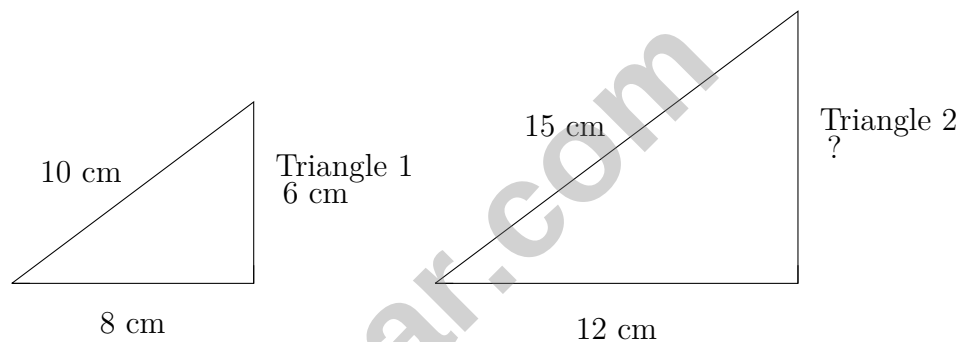


The number line shows a number increased by 3 equals 0. What is the original number?

☐ A. -3
☐ C. 0

☐ B. -2
☐ D. 3

2)



Triangles 1 and 2 are similar right triangles. What is the length of the missing side in Triangle 2?

☐ A. 7 cm

☐ C. 9 cm

☐ B. 8 cm

☐ D. 9.5 cm

3) Maya earns \$200 a week. If she puts 12% of her earnings into a savings account each week, how much does she save weekly?

☐ A. \$12

☐ C. \$24

☐ B. \$20

☐ D. \$30


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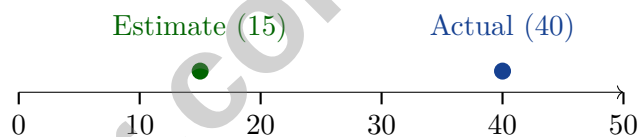
- 4) Which of the following represents the complete sample space for flipping a coin and choosing a number from $\{1, 2, 3\}$?

$\{H1, H2, H3, T1, T2, T3\}$

- ☐ A. 3 outcomes ☐ C. 5 outcomes
☐ B. 4 outcomes ☐ D. 6 outcomes
- 5) A fair die is rolled and a fair coin is flipped. What is the probability of rolling a 5 AND flipping heads?

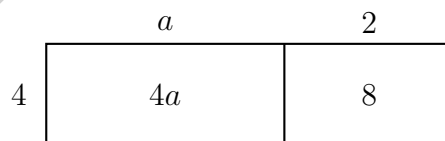
- ☐ A. $\frac{1}{12}$ ☐ C. $\frac{1}{8}$
☐ B. $\frac{1}{6}$ ☐ D. $\frac{5}{12}$

- 6) **Number Line of Estimates**



An estimate is 15, and the actual value is 40. What is the percent error?

- ☐ A. 62.5% ☐ C. 25%
☐ B. 37.5% ☐ D. 166.7%
- 7) The rectangle below models $4(a + 2)$. What is the total area expressed as a sum?

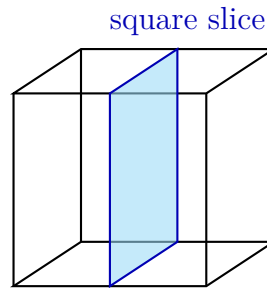


- ☐ A. $6a$ ☐ C. $4a + 8$
☐ B. $4a + 2$ ☐ D. $a + 8$



- 1) A cylinder has a surface area of 427.04 m^2 and a radius of 5 m. What is the height?
Use $\pi \approx 3.14$.

- ☐ A. 8 m ☐ C. 12 m
☐ B. 10 m ☐ D. 15 m



2)

A cube with side length 5 cm is sliced by a vertical plane parallel to a lateral face, passing through the center. What is the perimeter of the square cross-section?

- ☐ A. 10 cm ☐ C. 20 cm
☐ B. 15 cm ☐ D. 30 cm

- 3) Three angles form a straight line. Two of them measure 42° and 53° . What is the measure of the third angle?

- ☐ A. 11° ☐ C. 95°
☐ B. 85° ☐ D. 180°

- 4) A line segment has endpoints at (1, 2) and (4, 2). After a reflection over the x -axis, what is the length of the reflected segment?

- ☐ A. 3 units ☐ C. $\sqrt{13}$ units
☐ B. 4 units ☐ D. 6 units



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- 5) Two batches of cookies are weighed (in grams):

Batch A	Batch B
47, 48, 49, 50, 51	44, 48, 50, 52, 56

Which statement is true?

- ☐ A. Both batches have the same mean and median
☐ B. Batch A is more uniform in weight
☐ C. Batch B is always heavier
☐ D. Cannot compare without MAD
- 6) For side lengths 9, 12, and 15, compute $9^2 + 12^2 - 15^2$.

- 7) A consultant charges clients a base rate of \$100 per hour plus a 10% project management fee on the total billable hours. For a 10-hour project, what is the total cost?

- 8) A bar graph shows sales by quarter. The title says “Quarterly Sales Growth,” but the y-axis starts at \$90,000 (not \$0), and Q1–Q2 sales only rise from \$100,000 to \$101,000. Why is this graph potentially misleading?

- ☐ A. The bars are too tall
☐ B. The y-axis doesn’t start at zero, exaggerating the growth
☐ C. The color scheme is confusing
☐ D. The labels are too small



Rhode Island RICAS Grade 7 Practice Test Answer Keys**How to use this section with a Grade 7 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Rhode Island RICAS practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.EE.1-7.EE.2) $50 - 0.05(50) = 50(1 - 0.05) = 50(0.95)$. The factor 0.95 captures the scale: keeping 95% of the original.
- 2) **Choice C is correct.** (7.EE.3-7.EE.4) Subtract 3: $\frac{1}{2}x = 5$. Multiply by 2: $x = 10$.
- 3) **Choice D is correct.** (7.RP.3) Percent increase = $\frac{27-18}{18} \times 100\% = \frac{9}{18} \times 100\% = 50\%$.
- 4) **Choice A is correct.** (7.SP.5-7.SP.8) $\frac{2}{6} = \frac{1}{3}$. Rolling a 1 or 2 represents 2 favorable outcomes out of 6 equally likely outcomes.
- 5) **Choice B is correct.** (7.SP.1-7.SP.4) By only surveying Thursday morning customers, the sample is limited to that specific group. This is the actual population being sampled, even if it's not the bakery's intended population.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) The coin has 2 outcomes and the die has 6. By the counting principle: $2 \times 6 = 12$ total outcomes.
- 7) **Choice A is correct.** (7.SP.1-7.SP.4) Alex: mean 11, MAD 1.2 (very tight clustering). Blake: mean 12, MAD 4.0 (highly variable). Despite Blake's slightly higher average, Alex's low MAD shows consistent weekly effort, indicating greater discipline.
- 8) **The correct answer is 16 m.** (7.G.4-7.G.6) $C = \pi d \Rightarrow 50.24 = 3.14d \Rightarrow d = 50.24 \div 3.14 = 16$ m.
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) In a box plot, the box spans from Q1 to Q3, representing the middle 50% of the data. Scores between 70 and 88 represent this middle half.
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) $P(H) \cdot P(H) = \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$.
- 11) **Choice C is correct.** (7.SP.6) Pizza: 84 students; Pasta: 48 students. Combined: $84 + 48 = 132$ out of 240 total.
- 12) **Choice B is correct.** (7.SP.1-7.SP.4) Sum: $148 + 149 + 150 + 152 + 154 + 156 + 158 + 161 + 163 + 165 + 167 + 169 + 170 + 172 + 174 = 2388$. Mean = $2388/15 = 159.2 \approx 159$.
- 13) **Choice A is correct.** (7.SP.5-7.SP.8) Total marbles = $4 + 3 + 2 = 9$. Blue marbles = 3. Probability = $\frac{3}{9} = \frac{1}{3}$.
- 14) **Choice B is correct.** (7.SP.1-7.SP.4) $\frac{5}{50} = \frac{x}{10000}$. Reduce: $\frac{1}{10} = \frac{x}{10000} \Rightarrow x = 1000$.
- 15) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|144-120|}{120} \times 100\% = \frac{24}{120} \times 100\% = 20\%$. The estimate has the expected percent error.
- 16) **Choice D is correct.** (7.EE.1-7.EE.2) The diagram shows $3(x) + 3(2) = 3x + 6$. The missing value is 6.
- 17) **Choice D is correct.** (7.RP.3) Using $I = Prt$: $75 = 500 \times 0.05 \times t \Rightarrow 75 = 25t \Rightarrow t = 3$.
- 18) **Choice D is correct.** (7.NS.1-7.NS.3) $-8 - (-2) = -8 + 2 = -6$. Subtracting the negative shifts right by 2 on the number line.
- 19) **Choice D is correct.** (7.RP.1-7.RP.3) Scale factor: $20 \div 2 = 10$ (reduction by factor of 10). Height: $30 \div 10 = 3$ inches.
- 20) **The correct answer is A,D.** (7.G.1-7.G.5) A is correct: $(3)^2 = 9$. D is correct: $(2.5)^2 = 6.25$. B is wrong: $(\frac{1}{2})^2 = \frac{1}{4}$. C is wrong: $\sqrt{16} = 4$, so the linear factor is 4, not the other way.
- 21) **Choice D is correct.** (7.RP.3) Tax = $0.08 \times 20 = \$1.60$. Final price = $20 + 1.60 = \$21.60$.
- 22) **Choice C is correct.** (7.RP.3) 50% is half; half of 200 is 100.
- 23) **Choice D is correct.** (7.NS.1b) If $-9 + x = 4$, then $x = 4 - (-9) = 4 + 9 = 13$. Check: $-9 + 13 = 4$ ✓.
- 24) **Choice A is correct.** (7.EE.1) Option A has like terms $2a$ and $6a$ that have not been combined. All others are fully simplified with no like terms remaining.
- 25) **Choice B is correct.** (7.EE.1-7.EE.2) Factor out the GCF 6 and the negative: $-6m + 18 = -6(m - 3)$. Check: $-6(m - 3) = -6m + 18$.
- 26) **Choice C is correct.** (7.SP.1-7.SP.4) 52% of 250 = $0.52 \times 250 = 130$ plots.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) Check the constant-of-proportionality across rows: $\frac{110}{2} = 55$ mph and $\frac{275}{5} = 55$ mph. The ratio is constant, so distance is proportional to time.
- 28) **The correct answer is 113.04.** (7.G.4-7.G.6) Full circle: $A = 3.14 \times 12^2 = 3.14 \times 144 = 452.16$ ft². Quarter: $\frac{452.16}{4} = 113.04$ ft².



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Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 6 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

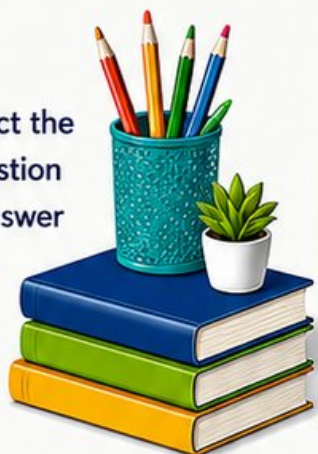
Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **6** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.



THIS BOOK INCLUDES:

6 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answers & Explanations



MORE PRACTICE. GREATER RESULTS.

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



Build Confidence

Practice regularly to feel prepared and test-ready.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Improve Understanding

Learn with clear explanations and step-by-step solutions.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost Performance

Apply your knowledge and achieve your best score!

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



2 ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



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