

5

West Virginia WVGSA

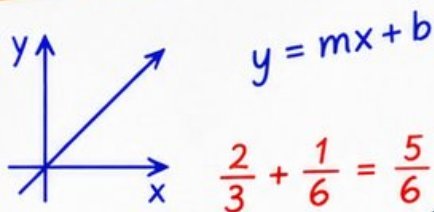
GRADE

7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



5 PRINTED TESTS



2 ONLINE TESTS

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



Build
Confidence



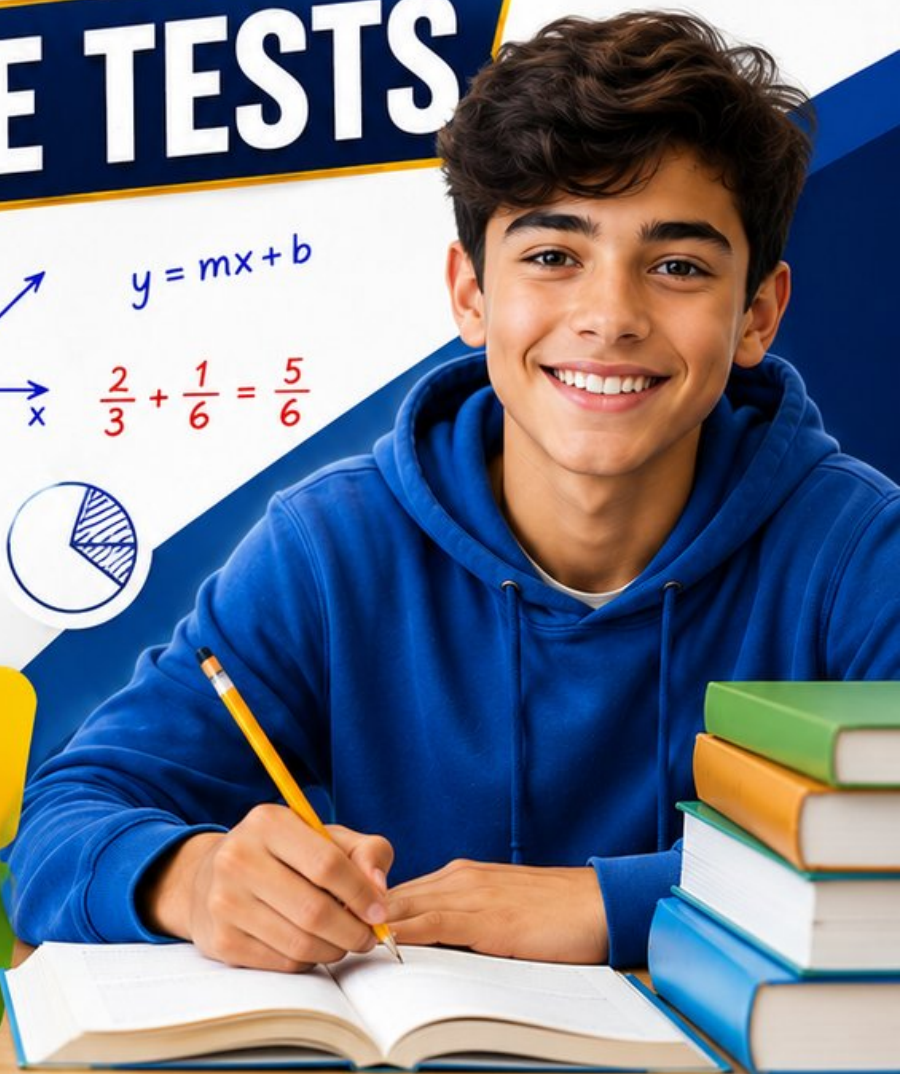
Strengthen
Math Skills



Detailed Answers
& Explanations



Improve Test
Performance



5 West Virginia WVGSA Grade 7 Math Practice Tests

Focused Math Review with Five Tests and Complete Answer Support



Five complete 40-question Grade 7 WVGSA 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, West Virginia Grade 7 Problem Solver!

Five focused rounds for sharper WVGSA math thinking

This book gives you five full Grade 7 WVGSA 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 West Virginia 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 five-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.

West Virginia 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?

Five WVGSA tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 3–5	Expressions, equations, inequalities, scale drawings, geometry, data, probability, 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.



Scan me!
For more practice
& answers

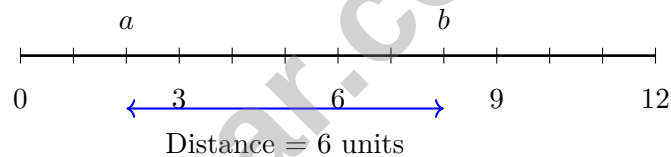
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- 1) Three scientists each estimated a chemical reaction's duration. All estimates are compared to an actual duration of 30 seconds. Which estimate has the largest percent error?

- ☐ A. Estimate of 27 seconds ☐ C. Estimate of 36 seconds
☐ B. Estimate of 32 seconds ☐ D. Estimate of 28 seconds

- 2) A lemonade stand charges \$0.75 per cup. What is the constant of proportionality for revenue per cup?



3)

If $a = 2$ and $b = 8$, the distance formula $|a - b|$ gives $|2 - 8| = 6$. What would the distance be if $a = -4$ and $b = 5$?

- ☐ A. -9 ☐ C. 9
☐ B. 1 ☐ D. -1

- 4) A model train set uses a scale of 1 : 87. If a real train car is 26 meters long, which is closest to the model length?

- ☐ A. 0.3 cm ☐ C. 3 cm
☐ B. 30 cm ☐ D. 22.6 m



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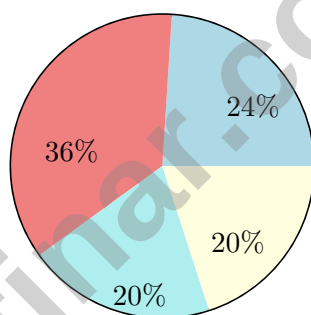
The bar model shows a number divided into equal parts. What is 25% of 80?

- ☐ A. 15 ☐ C. 25
☐ B. 30 ☐ D. 20

6) Calculate $14 + 11$.

- ☐ A. 3 ☐ C. 25
☐ B. -25 ☐ D. 154

7)



The circle graph shows a store's sales by department. Light blue is clothing (24%), light coral is electronics (36%), pale turquoise is home goods (20%), and light yellow is toys (20%). If the store made \$50,000 in total sales, how much came from electronics?

- ☐ A. \$12,000 ☐ C. \$24,000
☐ B. \$18,000 ☐ D. \$36,000



8) A baker uses 3 eggs for every 2 cups of flour. If the baker uses 9 eggs, how much flour is needed?

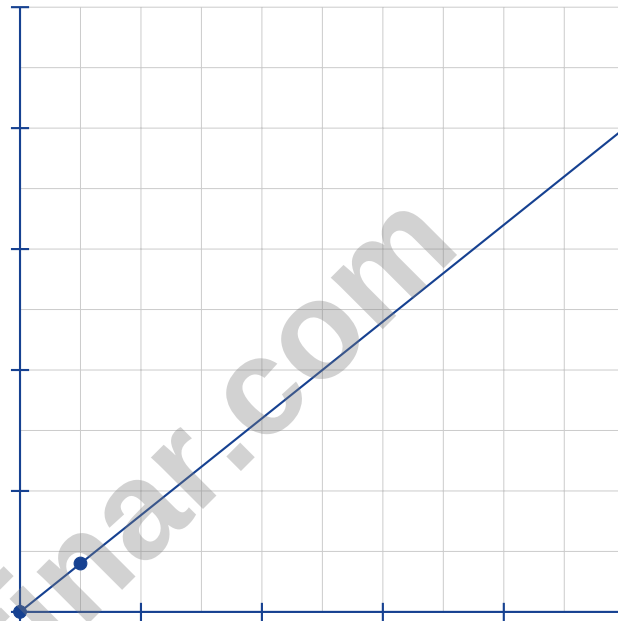
☐ A. 3 cups

☐ C. 9 cups

☐ B. 4 cups

☐ D. 6 cups

Earnings (\$)



Hours

9)

A proportional graph shows earnings over hours, passing through the origin and the unit-rate point $(1, 0.8)$. What is the hourly wage?

☐ A. \$10.00 per hour

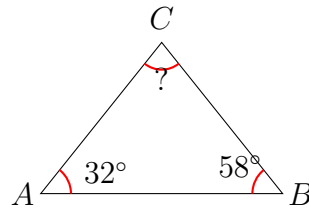
☐ C. \$8.00 per hour

☐ B. \$1.00 per hour

☐ D. \$0.80 per hour



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1)

In triangle ABC , angle A is 32° and angle B is 58° . How many distinct triangles with these angle measures can be drawn?

- ☐ A. 0
 ☐ C. Exactly 2
☐ B. 1
 ☐ D. Infinitely many

2) Three independent random samples of a population all estimate the proportion of people who prefer a certain product:

- Sample A ($n = 100$): 40% prefer the product
- Sample B ($n = 100$): 42% prefer the product
- Sample C ($n = 100$): 38% prefer the product

What does the slight variation in results between samples suggest?

- ☐ A. The three samples were not randomly selected
 ☐ C. The true population proportion is exactly 40%
☐ B. There is sampling variability; different random samples naturally show slightly different results
 ☐ D. These results are unreliable and should be ignored

3) A book is marked down by 30% from its original price of \$25. What is the discount amount?

- ☐ A. \$22.50
 ☐ C. \$15
☐ B. \$17.50
 ☐ D. \$7.50



- 4) A juice stand sells drinks at a proportional rate. When 5 drinks are sold, the revenue is \$30. Write the equation for revenue r in terms of drinks d .

☐ A. $r = 5d$

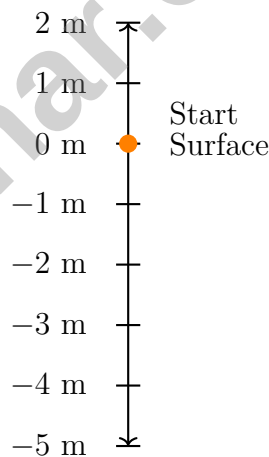
☐ C. $r = 30d$

☐ B. $r = \frac{d}{6}$

☐ D. $r = 6d$

- 5) A recipe calls for $3\frac{1}{2}$ cups of water. If you make $\frac{2}{3}$ of the recipe, how much water do you need? Express your answer as a mixed number.

- 6) Use the number line. A diver starts at the surface (0 m). She descends 3.5 m, then ascends 1.2 m. What is her position?



☐ A. -4.7 m

☐ C. 2.3 m

☐ B. -2.3 m

☐ D. 4.7 m



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1) Evaluate $\frac{m}{2} + 6$ when $m = 10$.

☐ A. 8

☐ C. 16

☐ B. 26

☐ D. 11

2) A student claims that $x = 5$ is a solution to $2x - 1 > 7$. Is the student correct?

☐ A. Yes, because $2(5) - 1 = 9 > 7$

☐ C. Yes, the solution is exactly 5

☐ B. No, because $2(5) - 1 = 9 \not> 8$

☐ D. No, because $5 > 7$ is false

3) A car's odometer reads 12,450 miles at the start of a trip. After the trip, it reads 12,718.5 miles. How far did the car travel?

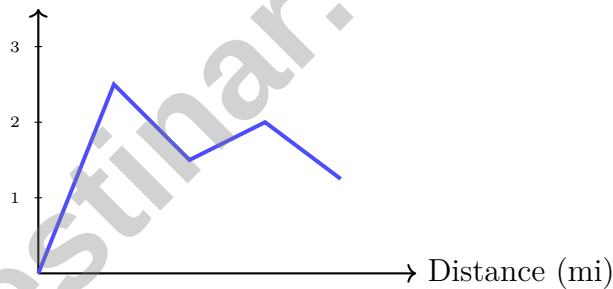
☐ A. 268.5 miles

☐ C. 270 miles

☐ B. 267.5 miles

☐ D. 12,450 miles

Elevation (100 ft)



4) Seg 1 Seg 2 Seg 3 Seg 4

A hiker follows a trail with elevation changes. Starting at sea level, segment 1 goes up 250 feet, segment 2 descends 100 feet, segment 3 ascends 50 feet, and segment 4 descends 75 feet. What is the final elevation?

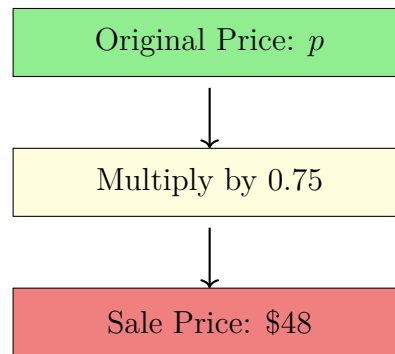
☐ A. 125 feet

☐ C. 475 feet

☐ B. 225 feet

☐ D. 325 feet





5)

What was the original price?

- ☐ A. \$36
 ☐ C. \$60
- ☐ B. \$48
 ☐ D. \$64
- 6) Liam's monthly budget allocates 40% to expenses, 30% to savings, 20% to investments, and 10% to charity. If his monthly income is \$2,500, how much does he invest each month?
- ☐ A. \$250
 ☐ C. \$750
- ☐ B. \$1,000
 ☐ D. \$500
- 7) Which statement is true about $\sqrt{50}$ and $\sqrt{75}$?
- ☐ A. $\sqrt{50} > \sqrt{75}$
☐ C. $\sqrt{50} < \sqrt{75}$
- ☐ B. $\sqrt{50} = \sqrt{75}$
☐ D. Cannot be compared
- 8) Which of the following is NOT in proper scientific notation?
- ☐ A. 3.8×10^5
☐ C. 12.4×10^2
- ☐ B. 9.2×10^{-3}
☐ D. 7.01×10^8



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& answers

West Virginia WVGSA 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 West Virginia WVGSA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.RP.3) A: $\frac{|27-30|}{30} \times 100\% = 10\%$. B: $\frac{|32-30|}{30} \times 100\% \approx 6.7\%$. C: $\frac{|36-30|}{30} \times 100\% = 20\%$. D: $\frac{|28-30|}{30} \times 100\% \approx 6.7\%$. Estimate C (20%) has the largest percent error.
- 2) **The correct answer is 0.75.** (7.RP.1-7.RP.3) Revenue is price per cup times cups sold, so the constant is 0.75.
- 3) **Choice C is correct.** (7.NS.1-7.NS.3) Distance: $|-4-5| = |-9| = 9$. Distance is always positive (non-negative).
- 4) **Choice C is correct.** (7.RP.1-7.RP.3) Divide actual length by scale: $26 \text{ m} \div 87 \approx 0.299 \text{ m} \approx 30 \text{ cm}$. The closest option is 3 cm (or 0.03 m, noting that 30 cm would overestimate).
- 5) **Choice D is correct.** (7.RP.3) 25% of 80 is $\frac{1}{4} \times 80 = 20$.
- 6) **Choice C is correct.** (7.NS.1b) Both numbers are positive. Add them directly: $14 + 11 = 25$.
- 7) **Choice B is correct.** (7.SP.1-7.SP.4) 36% of \$50,000 = $0.36 \times 50,000 = \$18,000$.
- 8) **Choice D is correct.** (7.RP.1-7.RP.3) Proportion: $\frac{3}{2} = \frac{9}{f}$. Cross multiply: $3f = 18$, so $f = 6$ cups.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point (1, 0.8) directly shows the hourly wage: \$0.80 per hour.
- 10) **Choice B is correct.** (7.NS.1-7.NS.3) Correct: $\frac{3}{7} \div \frac{2}{5} = \frac{3}{7} \times \frac{5}{2} = \frac{15}{14}$, not $\frac{6}{35}$.
- 11) **Choice B is correct.** (7.NS.1-7.NS.3) Afternoon temperature = $-5 + 18 = 13^\circ\text{F}$.
- 12) **Choice C is correct.** (7.EE.1-7.EE.2) Product of 2 and n is $2n$. Three more than $2n$ is $3 + 2n$.
- 13) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{\frac{2}{3}}{\frac{4}{9}} = \frac{2}{3} \times \frac{9}{4} = \frac{18}{12} = \frac{3}{2} = 1.5$ boxes/hr.
- 14) **Choice C is correct.** (7.RP.3) Fixed expenses: $40\% + 15\% + 10\% = 65\%$ of \$4,000 = \$2,600. Remainder: $100\% - 65\% = 35\%$ of \$4,000 = \$1,400. Split equally between savings and discretionary: $\$1,400 \div 2 = \700 .
- 15) **Choice A is correct.** (7.NS.2d) Both $0.8 = \frac{8}{10} = \frac{4}{5}$ (in simplest form). The answer is A, the fully simplified fraction.
- 16) **Choice C is correct.** (7.NS.1-7.NS.3) Since area = s^2 and $169 = 13^2$, the side length is $\sqrt{169} = 13$ inches.
- 17) **Choice B is correct.** (7.NS.1-7.NS.3) The negative exponent -31 indicates a decimal far to the right, meaning an extremely tiny value.
- 18) **The correct answer is A, C.** (7.SP.1-7.SP.4) Sample 1: $\frac{48}{200} = 0.24$; Sample 2: $\frac{36}{150} = 0.24$; Sample 3: $\frac{60}{250} = 0.24$. All are equal, so A is correct. These proportions can be used to estimate the full population (C). B is false (all equal), D is misleading, and E contradicts the actual data.
- 19) **Choice A is correct.** (7.EE.1-7.EE.2) A 25% markup is $c + 0.25c = c(1 + 0.25) = 1.25c$.
- 20) **Choice B is correct.** (7.SP.3) Volatility is measured by range. Location 1: $\$2.90 - \$2.10 = \$0.80$. Location 2: $\$3.20 - \$2.00 = \$1.20$. Larger range indicates more volatility.
- 21) **Choice A is correct.** (7.SP.5-7.SP.8) $P(A) = \frac{1}{2} = 0.5$ is the largest probability. $B = 0.25$, $C = D = 0.125$.
- 22) **Choice B is correct.** (7.NS.2) $\frac{2}{3} \times \frac{5}{6} = \frac{2 \times 5}{3 \times 6} = \frac{10}{18} = \frac{5}{9}$ (simplified). Multiply numerators and denominators, then reduce.
- 23) **Choice C is correct.** (7.RP.3) Tip = $0.18 \times 50 = \$9.00$. The question asks for the tip amount, not the total bill.
- 24) **Choice D is correct.** (7.RP.3) A: $2000(1.04)^3 = 2249.73$; interest = 249.73. B: $1500(1.06)^3 = 1785.41$; interest = 285.41. C: $2500(1.03)^3 = 2732.10$; interest = 232.10. D: $1000(1.08)^3 = 1259.71$; interest = 259.71. B earns the most.
- 25) **The correct answer is \$124.** (7.RP.3) Markup = $0.55 \times 80 = \$44$. Selling price = $80 + 44 = \$124$.
- 26) **Choice D is correct.** (7.G.4-7.G.6) Decompose into a rectangle and a triangle. Rectangle: $6 \times 4 = 24 \text{ m}^2$. Triangle: $\frac{1}{2} \times 6 \times 3 = 9 \text{ m}^2$. Add: $24 + 9 = 33 \text{ m}^2$.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) The ratio of berries to yogurt is $1 : 0.5$, so yogurt is half the berries. When berries = 2.5, $y = 1.25$. When yogurt = 4, $x = 8$. Thus $x + y = 8 + 1.25 = 9.25$.
- 28) **Choice D is correct.** (7.RP.3) Tip: $0.15 \times 42.80 = \$6.42$.
- 29) **Choice A is correct.** (7.G.4-7.G.6) Rectangular: $V = 4 \times 3 \times 10 = 120 \text{ cm}^3$. Triangular: $V = 6 \times 10 = 60 \text{ cm}^3$. The rectangular prism is larger.



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 5 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 **5** 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:

5 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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