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DELAWARE

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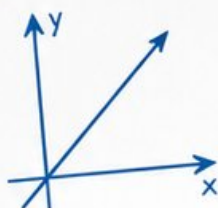
7

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



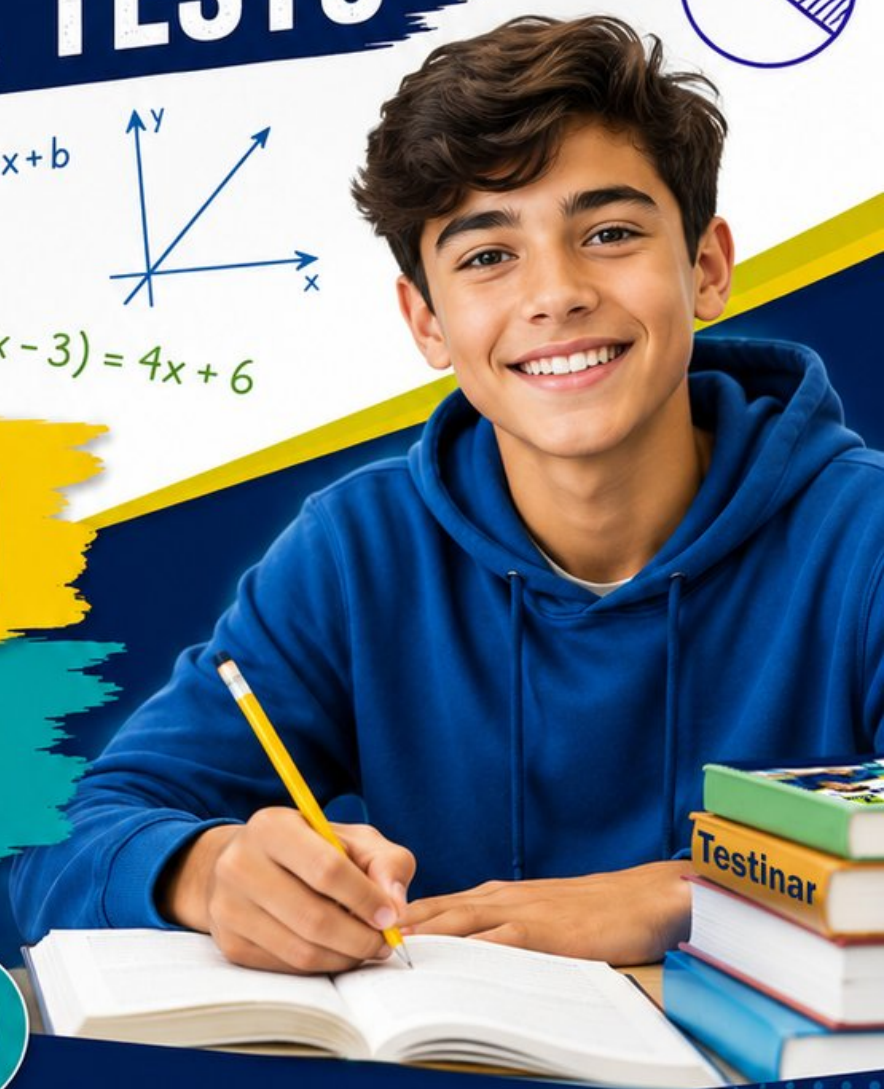
Strengthen
Math Skills



Detailed Answers
& Explanations

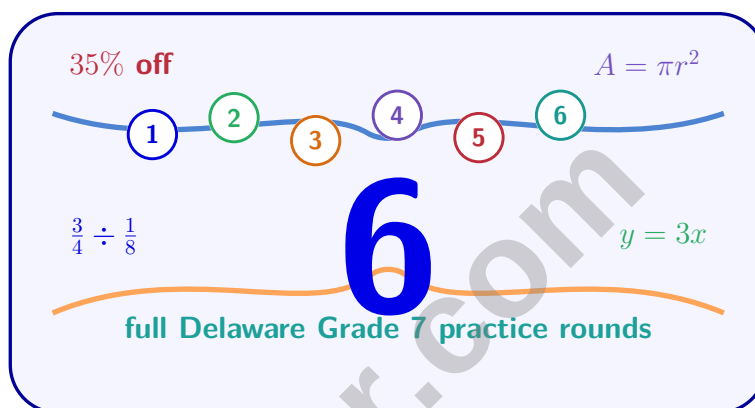


Improve Test
Performance



6 Delaware Smarter Balanced Grade 7 Math Practice Tests

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



Six complete 40-question Grade 7 Smarter Balanced 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, Delaware Grade 7 Problem Solver!

Six focused rounds for sharper Smarter Balanced math thinking

This book gives you six full Grade 7 Smarter Balanced 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 Delaware 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.

Delaware 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 Smarter Balanced 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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For more practice
& answers

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- 1) A plate has diameter 10 inches. Using $\pi \approx \frac{22}{7}$, approximately what is its circumference?
- ☐ A. $\frac{220}{7}$ in ☐ C. $\frac{440}{7}$ in
☐ B. $\frac{110}{7}$ in ☐ D. $\frac{80}{7}$ in
- 2) A rectangle has width x and length $2x + 3$. If the perimeter is 36 cm, what is the width?
- ☐ A. $x = 4$ cm ☐ C. $x = 6$ cm
☐ B. $x = 5$ cm ☐ D. $x = 8$ cm
- 3) What is 0.45 as a percent?
- ☐ A. 4.5% ☐ C. 0.45%
☐ B. 450% ☐ D. 45%
- 4) A company wants to learn about customer satisfaction. It mails surveys to customers and receives responses only from those who make the effort to mail back the survey. What type of bias is this?
- ☐ A. Convenience bias ☐ C. Voluntary response bias
☐ B. Leading question bias ☐ D. Systematic bias
- 5) Two datasets both have a range of 30. Which measure would help distinguish their variability further?
- ☐ A. Mode ☐ C. Minimum value
☐ B. Interquartile range or MAD ☐ D. Outlier count



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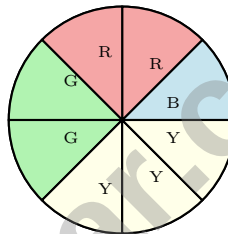
- 6) A cylinder has a volume of 565.2 cubic cm and a height of 20 cm. What is the radius?

Use $\pi \approx 3.14$.

- ☐ A. 1.5 cm ☐ C. 3 cm
☐ B. 2 cm ☐ D. 4.5 cm

- 7) A line graph shows monthly website traffic (in thousands of visitors): Jan 10, Feb 15, Mar 20, Apr 18, May 25, Jun 30. Which month shows the largest increase compared to the previous month?

- ☐ A. June (increase of 5) ☐ C. May (increase of 7)
☐ B. March (increase of 5) ☐ D. February (increase of 5)



8)

A spinner has 8 equal sections with colors: Blue (1), Red (2), Green (2), Yellow (3). What is the probability of spinning Green?

- ☐ A. $\frac{1}{8}$ ☐ C. $\frac{3}{8}$
☐ B. $\frac{1}{4}$ ☐ D. $\frac{3}{10}$

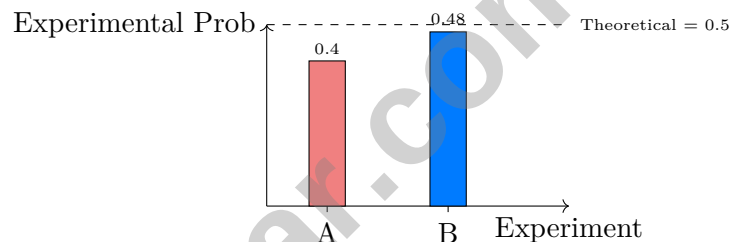
- 9) A square has vertices at (0,0), (2,0), (2,2), and (0,2). If the square is reflected over the line $y = -x$, what is the x -coordinate of the image of the vertex originally at (2,0)?



- 10) A bike shop offers frames in 2 sizes (Small, Large) and 4 colors (Black, White, Red, Green). A customer mistakenly counts the colors first as 4, then multiplies by only 1 size instead of 2. What error did the customer make, and what is the correct answer?

- ☐ A. The error is using addition; correct: 8
- ☐ B. The error is forgetting one size; correct: 8
- ☐ C. The error is confusing size and color; correct: 6
- ☐ D. The error is not using the counting principle; correct: 4

- 11) A researcher conducted two experiments. Experiment A: flipped a coin 60 times, got heads 24 times. Experiment B: flipped a coin 600 times, got heads 288 times. Which statement best describes these results?



- ☐ A. Experiment A's result is more reliable because it is smaller.
- ☐ B. Experiment B's result is closer to the theoretical probability of 0.5.
- ☐ C. Both experiments give the same experimental probability.
- ☐ D. Experiment A proves the coin is biased.
- 12) A photograph is enlarged from 4 inches wide by 6 inches tall to 10 inches wide. How tall is the enlarged photograph?



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1) A triangular prism with a right-triangular base (legs 3 cm and 4 cm) and height 10 cm is sliced perpendicular to its triangular bases. Which shape could NOT be a cross-section?

- ☐ A. Triangle ☐ C. Pentagon
☐ B. Rectangle ☐ D. Hexagon

2) A patio is composed of two identical trapezoids joined together. Each trapezoid has parallel sides of 4 m and 6 m with height 3 m. What is the total area?

- ☐ A. 15 m^2 ☐ C. 45 m^2
☐ B. 30 m^2 ☐ D. 60 m^2

3) A restaurant's menu prices increased by 8%. If a meal was \$25, what is the new price?

- ☐ A. \$33 ☐ C. \$32
☐ B. \$2 ☐ D. \$27

4) To simulate the probability of guessing a true/false question correctly 3 times in a row, which tool best models this compound event?

- ☐ A. Rolling a six-sided die once ☐ D. Drawing a card from a deck of 52
☐ B. Flipping a coin 3 times once
☐ C. Spinning a spinner with 3 equal sections once

5) An organized list shows all outcomes when drawing one tile from {M, A, T} and one from {1, 2, 3, 4}. How many ordered pairs should the complete list have?

M1, M2, M3, M4, A1, A2, A3, A4, T1, T2, T3, T4

- ☐ A. 7 pairs ☐ C. 12 pairs
☐ B. 9 pairs ☐ D. 16 pairs



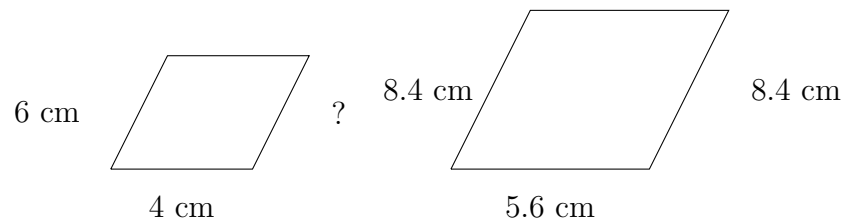
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& answers

- 6) A quality control test found that out of 750 items produced, 12 were defective. What is the experimental probability that an item is defective?
- ☐ A. $\frac{12}{750}$ ☐ C. 0.12
☐ B. $\frac{3}{125}$ ☐ D. $\frac{1}{12}$
- 7) An event has a probability of $\frac{2}{5}$. What is the probability of the complement (the event NOT happening)?
- ☐ A. $\frac{2}{5}$ ☐ C. $\frac{1}{5}$
☐ B. $\frac{3}{5}$ ☐ D. $\frac{5}{2}$
- 8) A student estimated the population of a city to be 500,000, but the actual population is 450,000. What is the percent error?
- ☐ A. 88.9% ☐ C. 15%
☐ B. 10% ☐ D. 11.1%
- 9) Expand: $8(1.5y - 2)$
- ☐ A. $12y - 10$ ☐ C. $8y - 16$
☐ B. $12y - 16$ ☐ D. $1.5y - 16$
- 10) A student deposits money into an account earning 6% simple interest. After 4 years, the total is \$2480. What was the original deposit?
- ☐ A. \$1800 ☐ C. \$2000
☐ B. \$1950 ☐ D. \$2200



- 1) A circular pizza has a diameter of 14 inches. A square pizza has sides of 14 inches. Which pizza has the larger area? Use $\pi \approx \frac{22}{7}$.

- ☐ A. Circular pizza
☐ B. Square pizza
☐ C. They have equal area
☐ D. Cannot be determined



2)

The trapezoids are similar. Find the missing side (marked with ?) in the left trapezoid.

- ☐ A. 4.2 cm
☐ B. 5 cm
☐ C. 5.6 cm
☐ D. 6 cm

- 3) A water tank in the shape of a cylinder has a radius of 4 feet and a height of 10 feet. Find the volume. Use $\pi \approx 3.14$.

- ☐ A. 125.6 ft³
☐ B. 251.2 ft³
☐ C. 502.4 ft³
☐ D. 1004.8 ft³

- 4) A dot plot shows quiz scores: 70 (one student), 75 (two students), 80 (four students), 85 (two students), 90 (one student). Which statement is correct?

- ☐ A. The median is 70
☐ B. The median is 80
☐ C. The median is 85
☐ D. The median is 90



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- 5) A bag contains 15 tokens: 9 green and 6 orange. Two students compute $P(\text{drawing green})$ differently: Student A: $\frac{9}{15} = \frac{3}{5}$. Student B: $\frac{9}{6} = \frac{3}{2}$. Who is correct?

☐ A. Both are correct. ☐ C. Only Student B is correct.
☐ B. Only Student A is correct. ☐ D. Neither is correct.

- 6) A spinner is divided into 3 equal sections (Red, Blue, Yellow), and a fair coin is flipped. How many total outcomes are possible?

☐ A. 3 ☐ C. 6
☐ B. 5 ☐ D. 9

- 7) Two spinners are used to simulate rolling two dice. Each spinner has 6 equal sections numbered 1–6. If each spinner is spun once in a trial, how many different outcomes are in the sample space?

- 8) Two dot plots show the number of text messages sent during a study session by two groups. Group P: 5, 6, 6, 7, 7, 7, 8, 8, 9 (messages); Group Q: 1, 2, 9, 10, 11, 12 (messages). Which group was more focused (less distracted)?

☐ A. Group P (consistent messaging around 7) ☐ C. Both groups sent identical messages
☐ B. Group Q (sent very few messages) ☐ D. Group Q was more focused



Delaware Smarter Balanced 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 Delaware Smarter Balanced practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.G.4-7.G.6) $C = \pi d = \frac{22}{7} \times 10 = \frac{220}{7}$ in ≈ 31.4 in.
- 2) **Choice B is correct.** (7.EE.4a) Perimeter: $2(x + 2x + 3) = 36$. Simplify: $2(3x + 3) = 36$. Distribute: $6x + 6 = 36$. Subtract 6: $6x = 30$. Divide: $x = 5$.
- 3) **Choice D is correct.** (7.RP.3) To convert a decimal to a percent, multiply by 100: $0.45 \times 100 = 45\%$. Alternatively, $0.45 = \frac{45}{100} = 45\%$.
- 4) **Choice C is correct.** (7.SP.1-7.SP.4) Only people motivated to respond (those with strong opinions) participate, making the sample non-representative of all customers.
- 5) **Choice B is correct.** (7.SP.1-7.SP.4) Range only tells the difference between max and min. IQR and MAD show how data is distributed within that range, distinguishing clustered from spread-out data with the same range.
- 6) **Choice C is correct.** (7.G.4-7.G.6) $565.2 = 3.14 \times r^2 \times 20 \Rightarrow 565.2 = 62.8r^2 \Rightarrow r^2 = 9 \Rightarrow r = 3$ cm.
- 7) **Choice C is correct.** (7.SP.1-7.SP.4) Comparing month-to-month increases: Feb (+5), Mar (+5), Apr (-2), May (+7), Jun (+5). May's increase from April (18) to May (25) is 7, which is the largest.
- 8) **Choice B is correct.** (7.SP.5-7.SP.8) Green sections: 2 out of 8. $P(\text{green}) = \frac{2}{8} = \frac{1}{4}$.
- 9) **The correct answer is 0.** (7.G.1-7.G.5) Reflection over $y = -x$ uses the rule $(x, y) \rightarrow (-y, -x)$. Applying this to (2, 0): $(2, 0) \rightarrow (-0, -2) = (0, -2)$. The x -coordinate of the image is 0.
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) Sizes: 2; colors: 4. Correct total: $2 \times 4 = 8$. The customer forgot to count one size, dividing by 2 instead.
- 11) **Choice B is correct.** (7.SP.6) Experiment A: $\frac{24}{60} = 0.4$ (differs by 0.1 from 0.5). Experiment B: $\frac{288}{600} = 0.48$ (differs by 0.02 from 0.5). This illustrates the law of large numbers: larger sample sizes produce experimental probabilities closer to the theoretical value.
- 12) **The correct answer is 15.** (7.G.1-7.G.5) Scale factor $= \frac{10}{4} = 2.5$. New height $= 6 \times 2.5 = 15$ inches.
- 13) **Choice D is correct.** (7.SP.5-7.SP.8) $P(\text{first prepared}) = \frac{7}{12}$; 6 prepared remain out of 11 total. $P(\text{second prepared}) = \frac{6}{11}$. Product: $\frac{7}{12} \cdot \frac{6}{11} = \frac{42}{132} = \frac{7}{22}$.
- 14) **Choice A is correct.** (7.SP.5-7.SP.8) A standard die has faces 1–6 only. Rolling a 7 is impossible, not merely unlikely. Probability = 0, not 0.1.
- 15) **Choice C is correct.** (7.SP.1-7.SP.4) $\frac{8}{40} = \frac{x}{200}$. Reduce: $\frac{1}{5} = \frac{x}{200} \Rightarrow x = 40$.
- 16) **Choice D is correct.** (7.RP.3) Percent error $= \frac{|88-80|}{80} \times 100\% = \frac{8}{80} \times 100\% = 10\%$.
- 17) **Choice A is correct.** (7.EE.1-7.EE.2) Correct: $-2(x) - 2(-3) = -2x + 6$. Student forgot that negative times negative is positive.
- 18) **Choice C is correct.** (7.RP.3) $I = 5000 \times 0.025 \times 8 = \1000 . $A = 5000 + 1000 = \$6000$.
- 19) **Choice C is correct.** (7.RP.1-7.RP.3) Multiply model height by scale factor: $3 \times 50 = 150$ feet.
- 20) **The correct answer is A, C.** (7.G.1-7.G.5) A: Two triangles with the same three side lengths are congruent by SSS. C: Two triangles with two equal sides and an equal included angle are congruent by SAS. B is incorrect because AAA determines similarity, not congruence (triangles can be different sizes). D is incorrect because two angles and two separate sides (not necessarily properly positioned) do not guarantee congruence.
- 21) **Choice C is correct.** (7.NS.1b) Combine step-by-step: $-2 + (-5) = -7$, then $-7 + 3 = -4$, then $-4 + 8 = 4$. Or group: $(-2 - 5) + (3 + 8) = -7 + 11 = 4$.
- 22) **The correct answer is 153.86.** (7.G.4-7.G.6) $A = 3.14 \times 7^2 = 3.14 \times 49 = 153.86$ cm².
- 23) **Choice D is correct.** (7.NS.1-7.NS.3) $4 - 10 = 4 + (-10) = -6$.
- 24) **The correct answer is 486.** (7.G.4-7.G.6) $SA = 6s^2 = 6(9)^2 = 6(81) = 486$ in².
- 25) **Choice D is correct.** (7.RP.3) Savings $= 0.18 \times 50 = \$9$.
- 26) **Choice B is correct.** (7.EE.1) Simplify: $(9 - 4)x + 2y = 5x + 2y$. The coefficient of x is 5.
- 27) **Choice C is correct.** (7.EE.1-7.EE.2) Check A: $-3(x + 3) = -3x - 9$. Correct. Check B: $2(-y + 4) = -2y + 8$. Correct. Check D: $-4(m + 5) = -4m - 20$. Correct. Check C: $-5(a + 3) = -5a - 15 \neq -5a + 15$. Incorrect. The correct factorization is $-5(a + 3) = -5a - 15$.



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

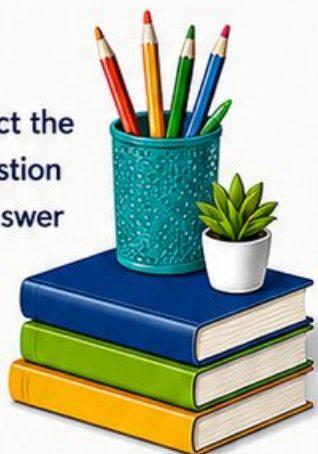
Your Persistence Coach

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!

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