

5

Montana MAST

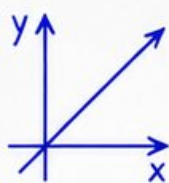
GRADE

7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3} + \frac{1}{6} = \frac{5}{6}$$



$$V = \pi r^2 h$$



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



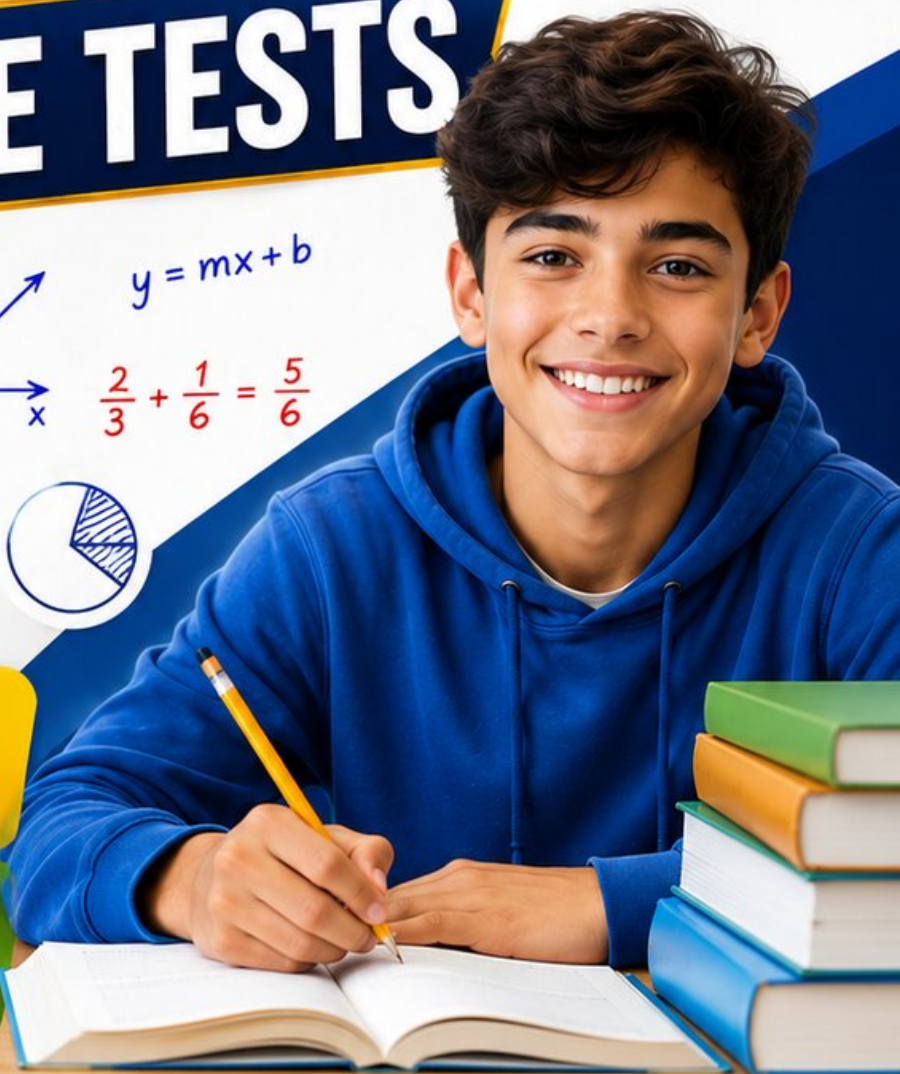
Strengthen
Math Skills



Detailed Answers
& Explanations

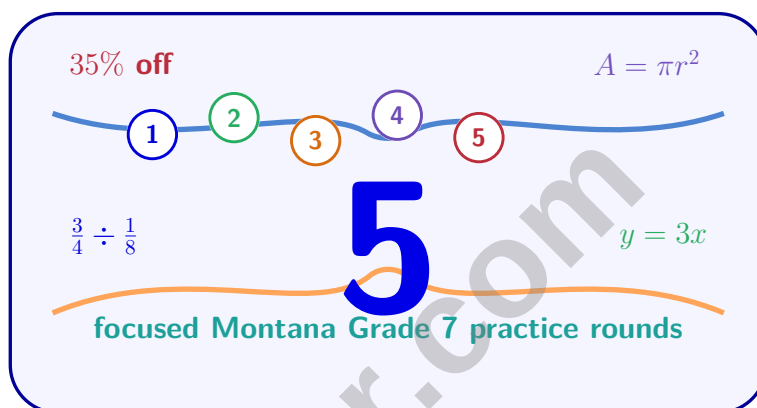


Improve Test
Performance



5 Montana MAST Grade 7 Math Practice Tests

Five-Test Review with Clear Explanations and Standards Practice



Five complete 40-question Grade 7 MAST 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, Montana Grade 7 Problem Solver!

Five focused rounds for sharper MAST math thinking

This book gives you five full Grade 7 MAST 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 Montana 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.

Montana 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 MAST 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.



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For more practice
& answers

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1) What is $-\frac{1}{4} \times 8$?

☐ A. -8

☐ C. -2

☐ B. -4

☐ D. 2

2) A student evaluates $-4 - (-6)$ and claims the answer is -10 . What is the student's mistake?

☐ A. Computing $-4 + 6 = 2$ when the answer should be -10

☐ C. Adding instead of subtracting the opposite value

☐ B. Adding the numbers instead of converting to addition: $-4 + (-6) = -10$

☐ D. Correctly applying the rule but making a computation error

3) If a sector measures 288° , what percent of the circle does it represent?

☐ A. 72%

☐ C. 80%

☐ B. 75%

☐ D. 88%

4) A price increases from $\$50$ to $\$65$. What is the percent increase?

☐ A. 20%

☐ C. 30%

☐ B. 25%

☐ D. 35%

5) A store sells a item for $\$84$ after applying a 30% markup to its cost. What was the cost?

☐ A. $\$54.60$

☐ C. $\$109.20$

☐ B. $\$114.86$

☐ D. $\$64.62$



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6) The temperature was -7°C in the morning. It rose by 15°C during the day. What was the temperature after the rise?

☐ A. -22°C

☐ C. 8°C

☐ B. -8°C

☐ D. 22°C

7) Evaluate $2x^2 + 3$ when $x = 4$.

☐ A. 19

☐ C. 44

☐ B. 32

☐ D. 35

8) A worker earns \$60 for working $2\frac{1}{2}$ hours. What is the hourly wage?

☐ A. \$150 per hour

☐ C. \$25 per hour

☐ B. \$20 per hour

☐ D. \$24 per hour

9) Which table does NOT show a proportional relationship?

x	1	2	3	4
y	5	10	15	20

☐ A. This one (shown above)

☐ D. All the above show proportional relationships

☐ B. $y = 6x$

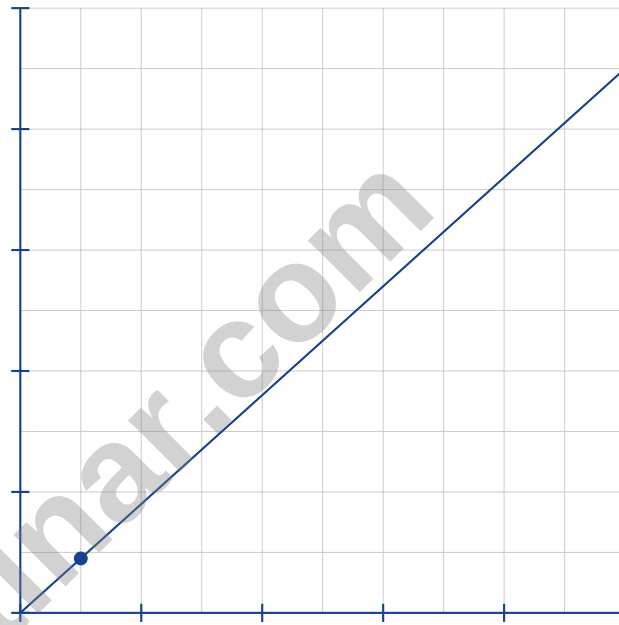
☐ C. A line through $(0,0)$ and $(3,12)$

10) A proportional relationship passes through the points $(6,2)$ and $(0,0)$. What is the constant of proportionality?



- 11) On a map where 2.5 cm represents 50 km, how many kilometers does 1 cm represent?

Grams of protein



Servings

12)

A food label shows protein content proportional to servings. What is the protein per serving?

- ☐ A. 10 grams ☐ C. 9 grams
☐ B. 1 gram ☐ D. 0.9 grams



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1) Solve: $4x < 20$

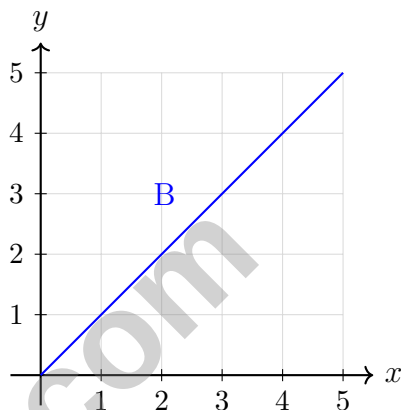
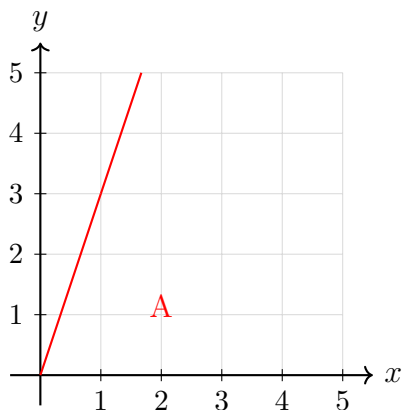
☐ A. $x > 5$

☐ C. $x \geq 5$

☐ B. $x < 5$

☐ D. $x < 80$

2) Which graph shows the relationship $y = 3x$?



☐ A. Both lines

☐ C. Neither line

☐ B. Blue line

☐ D. Red line

3) A store sells apples at \$0.75 per apple. If you buy 12 apples, what is the total cost and the constant of proportionality?

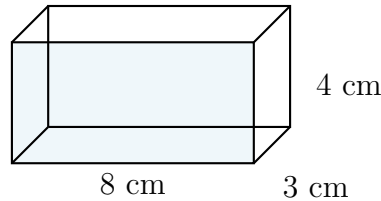
☐ A. Total = \$9; $k = 12$

☐ C. Total = \$12; $k = 0.75$

☐ B. Total = \$8.50; $k = 12$

☐ D. Total = \$9; $k = 0.75$





4)

A rectangular prism has dimensions $8\text{ cm} \times 4\text{ cm} \times 3\text{ cm}$. One student mistakenly calculates the surface area as $8 + 4 + 3 = 15$, then multiplies by 2 to get 30 cm^2 . What is the correct surface area?

☐ A. 30 cm^2 ☐ C. 136 cm^2 ☐ B. 96 cm^2 ☐ D. 192 cm^2

5) A survey asks: “How many hours did you study for math?” This is a:

☐ A. Biased question☐ C. Leading question☐ B. Neutral question☐ D. Voluntary response question

6) Simplify $6p^2 + 2p - 3p^2 - 5p + 4p^2$, then evaluate when $p = 2$.

7) A spinner with 4 equal sections (Red, Blue, Green, Yellow) is spun twice to simulate a compound event. If “success” is defined as “the first spin is Red and the second spin is Blue,” how many outcomes in the sample space represent a success?

☐ A. 1☐ C. 4☐ B. 2☐ D. 8

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1) A checking account allows you to write checks and make debit card purchases, but typically offers little to no interest. A savings account accrues interest but limits withdrawals. If you want to access your money frequently for bills, which account is better?

- ☐ A. Savings account
☐ B. Neither; use credit instead
☐ C. Both equally
☐ D. Checking account

2) Which equation is equivalent to $3(x - 5) = 24$?

- ☐ A. $3x - 15 = 24$
☐ B. $3x - 5 = 24$
☐ C. $x - 15 = 24$
☐ D. $3x = 19$

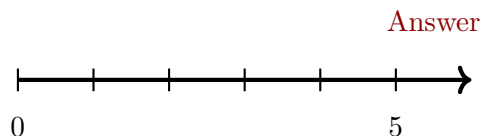
3) A scale drawing has a scale of 1 cm : 2 m. If an actual room is 8 m wide, how wide is it in the drawing?

- ☐ A. 2 cm
☐ B. 4 cm
☐ C. 6 cm
☐ D. 8 cm

4) Simplify: $-4 - (-6)$

- ☐ A. -10
☐ B. -2
☐ C. 2
☐ D. 10

5) Number-line model: Where does $\frac{5}{6} \div \frac{1}{6}$ map on the number line?



- ☐ A. 0
☐ B. Between 0 and 1
☐ C. At 5
☐ D. Beyond 5



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6) Convert $\frac{4}{11}$ to a decimal.

☐ A. 0.4

☐ C. $0.\overline{36}$

☐ B. $0.\overline{4}$

☐ D. 0.40

7) A contractor charges \$12.50 per hour. For a job that takes 7.5 hours, what is the total cost?

☐ A. \$25.00

☐ C. \$93.75

☐ B. \$87.50

☐ D. \$96.25

8) A phone plan costs \$25 per month plus \$0.20 for each minute of international calls. If a customer's bill was \$45, write an equation to represent the number of minutes m of international calls, solve for m , and verify your answer.

9) An ocean temperature is changing at a rate of -0.3°C per hour. If the current temperature is 12°C , what will the temperature be after 5 hours?

☐ A. 10.5°C

☐ C. 11.5°C

☐ B. 13.5°C

☐ D. 12.3°C

10) Which number is larger: 4.1×10^5 or 3.9×10^6 ?

☐ A. 4.1×10^5

☐ C. They are equal

☐ B. 3.9×10^6

☐ D. Cannot be determined



Montana MAST 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 Montana MAST practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.NS.2) $-\frac{1}{4} \times 8 = -\frac{8}{4} = -2$.
- 2) **Choice B is correct.** (7.NS.1-7.NS.3) The error is choice B. The student forgot to flip the sign of -6 to $+6$. The correct process: $-4 - (-6) = -4 + 6 = 2$. The student mistakenly added $-4 + (-6) = -10$ instead.
- 3) **Choice C is correct.** (7.SP.1-7.SP.4) $288^\circ \div 360^\circ \times 100 = 80\%$.
- 4) **Choice C is correct.** (7.RP.3) The increase is $65 - 50 = 15$. Percent: $\frac{15}{50} = 0.30 = 30\%$.
- 5) **Choice D is correct.** (7.RP.3) Selling price = cost $\times 1.30$. So $84 = \text{cost} \times 1.30$, giving cost = $84 \div 1.30 \approx \$64.62$.
- 6) **Choice C is correct.** (7.NS.1b) The temperature change is modeled by $-7 + 15 = 8$. A rise of 15° means we add 15 to the initial temperature of -7° .
- 7) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $2(4)^2 + 3 = 2(16) + 3 = 32 + 3 = 35$.
- 8) **Choice D is correct.** (7.RP.1-7.RP.3) Hourly wage = $\frac{60}{2\frac{1}{2}} = \frac{60}{5/2} = 60 \times \frac{2}{5} = 24$ dollars per hour.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) The table has ratio $y/x : 5/1 = 5, 10/2 = 5, 15/3 = 5, 20/4 = 5$ (constant). Option B: $y = 6x$ is proportional. Option C: line through origin $(0,0)$ and $(3,12)$ has slope 4, so $y = 4x$ (proportional). All are proportional.
- 10) **The correct answer is $\frac{1}{3}$.** (7.RP.1-7.RP.3) The constant is $k = \frac{y}{x} = \frac{2}{6} = \frac{1}{3}$.
- 11) **The correct answer is 20.** (7.RP.1-7.RP.3) If 2.5 cm = 50 km, then 1 cm = $50 \div 2.5 = 20$ km.
- 12) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point $(1, 0.9)$ shows 0.9 grams per serving.
- 13) **The correct answer is \$81.** (7.RP.3) $I = 600 \times 0.045 \times 3 = \81 .
- 14) **Choice D is correct.** (7.RP.3) Multiply by 100: $0.08 \times 100 = 8\%$. Equivalently, $0.08 = \frac{8}{100} = 8\%$.
- 15) **Choice D is correct.** (7.RP.3) Housing + Savings = $(35\% + 15\%) \times \$5,000 = 50\% \times 5000 = 0.50 \times 5000 = \$2,500$.
- 16) **Choice D is correct.** (7.NS.1-7.NS.3) Convert to common denominator 6: $1\frac{2}{6} + 2\frac{1}{6} = 3\frac{3}{6} = 3\frac{1}{2}$.
- 17) **Choice A is correct.** (7.NS.1-7.NS.3) $\frac{4}{5} \div 2 = \frac{4}{5} \times \frac{1}{2} = \frac{4}{10} = \frac{2}{5}$.
- 18) **The correct answer is A, C.** (7.RP.1-7.RP.3) From the table, $k = 14/2 = 7$, so A is true and the equation is $y = 7x$ (C is true). B is false: $k = 7$, not 2.8. D is false: when $x = 10$, $y = 7 \cdot 10 = 70$, not 68.
- 19) **Choice B is correct.** (7.NS.2d) Divide $1 \div 8 = 0.125$. The denominator $8 = 2^3$ gives a terminating decimal.
- 20) **Choice A is correct.** (7.NS.1-7.NS.3) Amount needed: $\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$ cup.
- 21) **Choice C is correct.** (7.NS.1-7.NS.3) $12^2 = 144$ and $13^2 = 169$. Since $144 < 150 < 169$, we have $12 < \sqrt{150} < 13$.
- 22) **The correct answer is 12%.** (7.RP.3) Percent error = $\frac{|110-125|}{125} \times 100\% = \frac{15}{125} \times 100\% = 12\%$.
- 23) **Choice A is correct.** (7.NS.1-7.NS.3) Final elevation = $1,450 + 325 - 180 = 1,595$ feet.
- 24) **Choice B is correct.** (7.NS.1-7.NS.3) $83,500 = 8.35 \times 10,000 = 8.35 \times 10^4$. Decimal moved 4 places left.
- 25) **Choice A is correct.** (7.SP.5-7.SP.8) Since all probabilities sum to 1: $P(Z) = 1 - 0.45 - 0.35 = 0.2$.
- 26) **Choice C is correct.** (7.RP.3) Order is $\$32 \geq \25 , so delivery fee is \$4.00. Total = $32 + 4 = \$36.00$.
- 27) **Choice A is correct.** (7.SP.3) Stable sales mean consistent output. Bakery A's clustering at 16–17 with range 4 (15–19) shows stability. Bakery B's spread from 10–25 (range 15) shows inconsistent sales.
- 28) **Choice C is correct.** (7.SP.1-7.SP.4) Values in range: 305, 308, 311 (from stems 30 and 31, leaves 5, 8, 1). That's 3 values.
- 29) **Choice D is correct.** (7.RP.1-7.RP.3) Set up: $\frac{1 \text{ CAD}}{0.75 \text{ USD}} = \frac{x \text{ CAD}}{100 \text{ USD}}$. So $x = \frac{100}{0.75} \approx 133.33$ CAD.
- 30) **Choice C is correct.** (7.G.4-7.G.6) Rectangle: $10 \times 6 = 60 \text{ m}^2$. Two semicircles = 1 full circle with radius 3 m: $\pi r^2 = 3.14 \times 9 = 28.26 \text{ m}^2$. Total: $60 + 28.26 = 88.26 \text{ m}^2$.
- 31) **Choice C is correct.** (7.RP.3) Housing budget: $0.40 \times 3000 = \$1200$.
- 32) **Choice A is correct.** (7.RP.3) Statement A is not universally true — the rate must be positive for interest in year 2 to exceed year 1, but A claims "always." All other statements are accurate for standard compound interest scenarios.



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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 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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