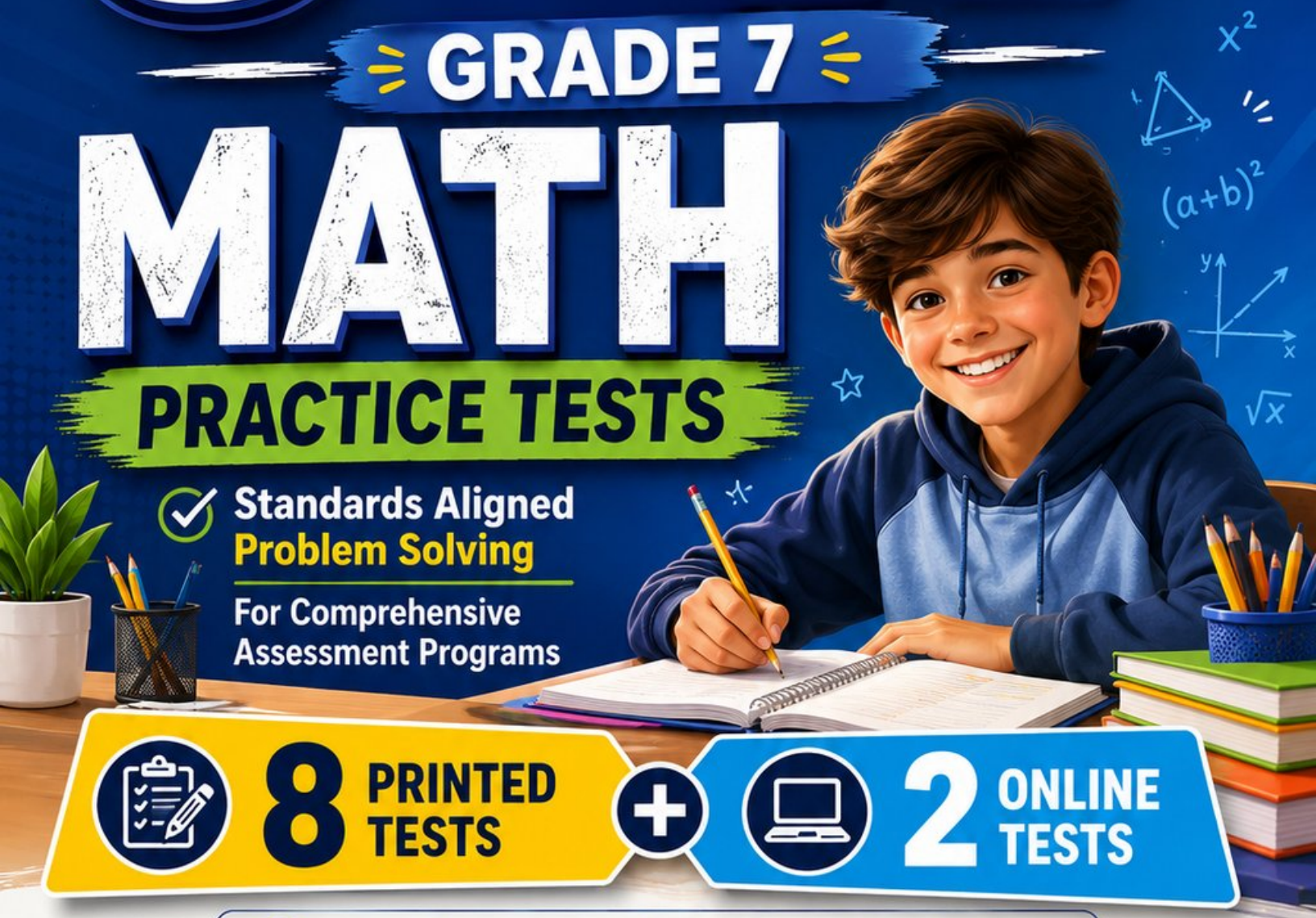
8 Illinois IAR

GRADE 7

MATH

PRACTICE TESTS



Standards Aligned
Problem Solving

For Comprehensive Assessment Programs

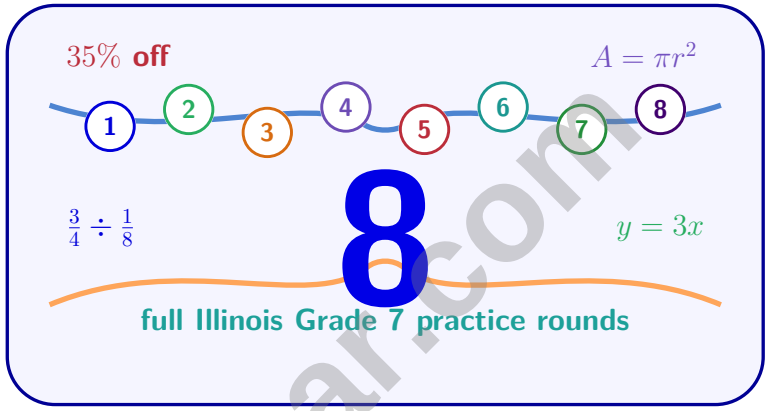
8 PRINTED TESTS + **2 ONLINE TESTS**

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

BUILD CONFIDENCE | STRENGTHEN SKILLS | THINK SMARTER | BE TEST-READY

8 Illinois IAR Grade 7 Math Practice Tests

Test-ready practice with Illinois Grade 7 percents, interest, expressions, inequalities, volume, data, and chance



Eight complete 40-question Grade 7 IAR 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

Copyright ©

Testinar Inc

Published by Testinar Inc

Testinar.com

Welcome, Illinois Grade 7 Problem Solver!

Eight focused rounds for sharper IAR math thinking

This book gives you eight full Grade 7 IAR 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 Illinois 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.

How to Use This Book

An eight-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.

Illinois 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?

Eight IAR tests, 320 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.
Tests 7–8	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
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.

Table of Contents

1) If two similar rectangles have areas of 12 square cm and 48 square cm, what is the scale factor from the smaller to the larger rectangle?

☐ A. 2
☐ B. 4
☐ C. 2.45
☐ D. $\sqrt{12}$

2)

h_1	$8x$	12
h_2	16	24
	w_1	w_2

An area model has four rectangular sections with areas $8x$, 12, 16, and 24. What is the GCF of all four terms?

☐ A. 2
☐ B. 4
☐ C. 8
☐ D. 12

3) A rental company charges \$25 per day. If a customer has a budget of at most \$200, what is the maximum number of days they can rent?

☐ A. $25d \geq 200$
☐ B. $d \geq 8$
☐ C. $d > 8$
☐ D. $d \leq 8$

4) The temperature at 6 AM was -8°C. It rose by 3.5°C by 9 AM. What was the temperature at 9 AM?

☐ A. -11.5°C
☐ B. -4.5°C
☐ C. 4.5°C
☐ D. 11.5°C

5) A contractor builds two walls. Wall 1 is $(10x + 8)$ feet long. Wall 2 is $(6x - 3)$ feet long. What is the total length?

☐ A. $16x + 5$
☐ B. $16x + 11$
☐ C. $4x + 5$
☐ D. $16x + 3$

6) Simplify: $\frac{g^{14}}{g^6}$

☐ A. g^8
☐ B. g^{20}
☐ C. g^{84}
☐ D. g^2

7) An investment grows from \$900 to \$1,059.48 in 2 years with annual compound interest. Find the interest rate as a decimal.

8) Solve: $\frac{1}{2}x + 5 = 9$

☐ A. $x = 4$
☐ B. $x = 6$
☐ C. $x = 8$
☐ D. $x = 10$

9) A rectangle has width x and length $2x + 3$. If the perimeter is 36 cm, what is the width?

☐ A. $x = 4$ cm
☐ B. $x = 5$ cm
☐ C. $x = 6$ cm
☐ D. $x = 8$ cm

10) Evaluate: $5.2 - 7.1$

- ☐ A. -1.9
- ☐ B. 1.9
- ☐ C. 12.3
- ☐ D. -12.3

11) Divide $-2\frac{1}{2} \div (-\frac{5}{6})$.

- ☐ A. -3
- ☐ B. 3
- ☐ C. $\frac{5}{4}$
- ☐ D. $-\frac{5}{4}$

12) Which fraction converts to a terminating decimal?

- ☐ A. $\frac{1}{3}$
- ☐ B. $\frac{2}{5}$
- ☐ C. $\frac{1}{6}$
- ☐ D. $\frac{1}{7}$

13) A student factored $14a + 21b$ as $7(2a + 3b)$. Another factored it as $7(2a) + 7(3b)$. Are these equivalent?

- ☐ A. Yes, and both are fully factored
- ☐ B. No; the second form is not fully factored
- ☐ C. No; you cannot distribute a 7 twice
- ☐ D. Yes, but only the first is fully factored

14) Temperature readings are 12.5°C, 13.2°C, 12.8°C, and 14.1°C. If the temperature is expected to increase by 10% over the next hour, what will the temperature be after that increase?

1) A map shows a park with a scale of 2 cm : 1 km. If the park on the map has an area of 8 cm^2, what is the actual area of the park in square kilometers?

☐ A. 2 km^2
☐ B. 4 km^2
☐ C. 8 km^2
☐ D. 16 km^2

2) A store gives a \$5 coupon for every 6 items purchased. If you buy x bundles of 6 items, each bundle costs \$8, and your total before coupon is \$48, which equation represents your savings per bundle?

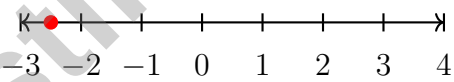
☐ A. $6(8-5)=18$
☐ B. $x(8-5)=48$
☐ C. $6(8)-5=48$
☐ D. $(8-5)x=18$

3) Solve: $\frac{2x}{5}=8$

☐ A. $x=16$
☐ B. $x=20$
☐ C. $x=24$
☐ D. $x=32$

4) Use the number line to find $-2.5+4.7$.

Start: -2.5



☐ A. -7.2
☐ B. -2.2
☐ C. 2.2
☐ D. 7.2

5) A deck of cards has 52 cards. What is the probability of drawing a face card (Jack, Queen, or King) from a standard deck?

☐ A. $\frac{12}{52}$
☐ B. $\frac{2}{13}$
☐ C. $\frac{4}{13}$
☐ D. $\frac{1}{4}$

6) A coin is flipped and a number is chosen from a spinner with sections 1, 2, 3, 4. How many favorable outcomes result in a heads and an odd number?

☐ A. 1
☐ B. 2
☐ C. 3
☐ D. 4

7) A standard die is rolled twice. What is the probability of rolling a 4 on the first roll and a number less than 4 on the second roll?

☐ A. $\frac{3}{36}$
☐ B. $\frac{1}{18}$
☐ C. $\frac{4}{36}$
☐ D. $\frac{7}{36}$

8) A basketball player tracked free-throw success in practice sessions. The results are:

Session	Attempts	Made
Session 1	50	38
Session 2	75	54
Session 3	100	76

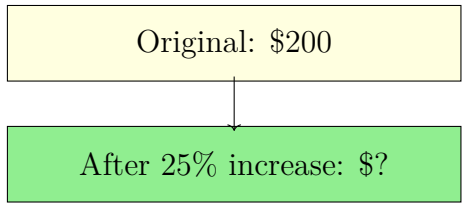
What is the overall experimental probability of success across all three sessions?

☐ A. 0.75
☐ B. 0.76
☐ C. $\frac{168}{225}$
☐ D. 0.71

9) When converting data into a stem-and-leaf plot, a student mistakenly interprets stem 11 with leaf 2 as 1.12 instead of 112. This is an example of which type of error?

☐ A. Reading error
☐ B. Computational error
☐ C. Conceptual error
☐ D. Rounding error

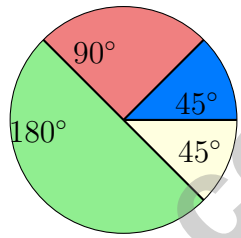
1)



If an item costs $200 and increases by 25%, what is the new price?

☐ A. $225
☐ C. $275
☐ B. $300
☐ D. $250

2)



This spinner shows four sectors with angle measures 45°, 90°, 180°, 45°. Which outcome is most likely?

☐ A. The 45° sector
☐ C. The 180° sector
☐ B. The 90° sector
☐ D. All outcomes are equally likely

3) A square patio has a perimeter of 24 meters. What is its area?

☐ A. 24 m^2
☐ C. 48 m^2
☐ B. 36 m^2
☐ D. 144 m^2

4) A weather forecast says there is a 60% chance of rain tomorrow. What is this probability as a decimal?

☐ A. 0.06
☐ B. 0.6
☐ C. 6.0
☐ D. 60

5) What is $-7-(-7)$?

☐ A. -14
☐ B. 7
☐ C. 14
☐ D. 0

6) Over how many years will \$1500 at 5.5% simple interest earn \$412.50 in interest?

☐ A. 2 years
☐ B. 3 years
☐ C. 4 years
☐ D. 5 years

7) Which shows $20y+24$ factored completely?

☐ A. $4(5y+6)$
☐ B. $2(10y+12)$
☐ C. $8(2.5y+3)$
☐ D. $6(3.33y+4)$

8) A cube has surface area 150 cm^2. What is the edge length of the cube?

☐ A. 5 cm
☐ B. 6 cm
☐ C. 25 cm
☐ D. 30 cm

Illinois IAR 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 Illinois IAR practice test.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice A is correct.** 7.G.1-7.G.5 The area ratio is $\frac{48}{12} = 4$. Since area scales by (scale factor)^2, we have (scale factor)$^2 = 4$, so scale factor $= 2$.
2) **Choice B is correct.** 7.EE.1-7.EE.2 Find GCF of $8, 12, 16, 24$. Factors of 8: $1, 2, 4, 8$. Factors of 12: $1, 2, 3, 4, 6, 12$. Factors of 16: $1, 2, 4, 8, 16$. Factors of 24: $1, 2, 3, 4, 6, 8, 12, 24$. The GCF of all four is 4.
3) **Choice D is correct.** 7.EE.4b Set up: $25d \leq 200$ (total cost at most \$200). Divide by 25: $d \leq 8$ days maximum.
4) **Choice B is correct.** 7.NS.1-7.NS.3 $-8 + 3.5 = -4.5°$C.
5) **Choice A is correct.** 7.EE.1-7.EE.2 Add both walls: $(10x + 8) + (6x - 3) = (10x + 6x) + (8 - 3) = 16x + 5$ feet.
6) **Choice A is correct.** 7.EE.1-7.EE.2 Quotient rule: subtract exponents with the same base: $\frac{g^{14}}{g^6} = g^{14-6} = g^8$.
7) **The correct answer is** 0.08 **.** 7.RP.3 $900(1 + r)^2 = 1059.48 \Rightarrow (1 + r)^2 = 1.1772 \Rightarrow 1 + r = 1.08 \Rightarrow r = 0.08$.
8) **Choice C is correct.** 7.EE.3-7.EE.4 Subtract 5: $\frac{1}{2}x = 4$. Multiply by 2: $x = 8$.
9) **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: $x = 5$.
10) **Choice A is correct.** 7.NS.1-7.NS.3 Since $5.2 < 7.1$, the difference is negative: $5.2 - 7.1 = -1.9$.
11) **Choice B is correct.** 7.NS.1-7.NS.3 Convert: $-2\frac{1}{2} = -\frac{5}{2}$. Then $(-\frac{5}{2}) \div (-\frac{5}{6}) = (-\frac{5}{2}) \times (-\frac{6}{5}) = \frac{30}{10} = 3$.
12) **Choice B is correct.** 7.NS.2d A fraction terminates if the denominator has only factors of 2 and/or 5. Dividing: $2 \div 5 = 0.4$. The others contain factors like 3 or 7.
13) **Choice D is correct.** 7.EE.1-7.EE.2 Both are equivalent: $7(2a + 3b) = 7(2a) + 7(3b)$. However, the first is the standard factored form (GCF factored once). The second form shows distribution but should be simplified.
14) **The correct answer is** 14.465 **.** 7.NS.1-7.NS.3 Average current temperature: $\frac{12.5+13.2+12.8+14.1}{4} = \frac{52.6}{4} = 13.15°$C. Increase of 10%: $0.10 \times 13.15 = 1.315°$C. New temperature: $13.15 + 1.315 = 14.465°$C.
15) **Choice B is correct.** 7.EE.4a Service call is \$65 plus \$40 per hour. So $65 + 40h = 185$.
16) **Choice B is correct.** 7.G.1-7.G.5 Reflection over $y = -x$ swaps coordinates and negates both: $(x, y) \to (-y, -x)$.
17) **Choice D is correct.** 7.SP.1-7.SP.4 Student A: Stem 6 (2 leaves) + Stem 7 (3 leaves) + Stem 8 (2 leaves) = 7 scores. Student B: Stem 6 (1 leaf) + Stem 7 (2 leaves) + Stem 8 (3 leaves) = 6 scores. Total = 7 + 6 = 13 scores.
18) **Choice C is correct.** 7.SP.5-7.SP.8 Two favorable outcomes out of six: $P(\text{favorable}) = \frac{2}{6} = \frac{1}{3}$.
19) **Choice A is correct.** 7.NS.2 Correct: $-2(3 + 4) = -2(7) = -14$ or $-2(3) + (-2)(4) = -6 + (-8) = -14$. Student's error: used $+2(4)$ instead of $-2(4)$.
20) **Choice B is correct.** 7.NS.1-7.NS.3 $13 \times 13 = 169$, so $\sqrt{169} = 13$.
21) **The correct answer is A,B.** 7.RP.3 Methods A and B are mathematically valid ways to find 32% of 500. Method C incorrectly inverts the fraction. Method D uses division instead of multiplication and gives an incorrect equation.
22) **Choice D is correct.** 7.RP.3 Total lesson cost $= 35 \times 8 =$ \$280. Tip $= 0.15 \times 280 =$ \$42. Total paid $= 280 + 42 =$ \$322.
23) **Choice D is correct.** 7.RP.1-7.RP.3 Scale 1 in. = 4 ft. means $\frac{1}{4} = \frac{x}{16}$, so $x = 4$ inches. The student incorrectly multiplied instead of dividing.
24) **Choice A is correct.** 7.G.4-7.G.6 Rectangle: $30 \times 20 = 600$ m^2. Triangle: $\frac{1}{2} \times 20 \times 5 = 50$ m^2. Pond: $3.14 \times 9 = 28.26$ m^2. Grass: $600 - 50 - 28.26 = 521.74$ m^2.
25) **Choice A is correct.** 7.G.4-7.G.6 $h = \frac{V}{B} = \frac{126}{18} = 7$ inches.
26) **Choice C is correct.** 7.G.1-7.G.5 Knowing only the three angles determines the shape (similarity), not the size. Infinitely many triangles with angles $40°, 60°, 80°$ exist at different scales.
27) **Choice C is correct.** 7.G.4-7.G.6 In the same circle, sector area is proportional to central angle. Since $80° = 2 \times 40°$, Sector Y is twice as large as Sector X.
28) **The correct answer is** 1.56×10^{-4} **.** 7.NS.1-7.NS.3 Move the decimal 4 places to the right to get the coefficient 1.56. The exponent is -4.

Hi, Detail Champion!

◇ In Grade 7, small details can change an entire answer: a negative sign, a decimal place, a unit, an exponent, or an inequality symbol. ◇

⋆ **Remember this:** You practiced noticing those details. That is a serious test skill, and it gets better with every careful review. This version gave you 8 opportunities to rehearse test-day habits. ⋆

Detail Checks

- **Signs:** Circle negatives before simplifying.
- **Symbols:** Read inequality signs carefully.
- **Decimals:** Line up place values.
- **Units:** Match the unit the question asks for.

Grade 7 test-day tip: Use the final minute on each section for a detail scan, not a full redo.

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

Jay Daie

Your Detail-Check Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** 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:

- **8** Full-Length Printed Tests
- **2** Online Practice Tests
- Detailed Answer 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

Stronger Math Skills
Build a solid foundation through targeted practice and review.

Better Problem Solving
Develop logical thinking and effective solution strategies.

Deeper Understanding
Reinforce key concepts with clear explanations and meaningful practice.

Test Confidence
Familiarize with test formats and improve accuracy and speed.

Achieve Success
Build confidence and perform your best on test day.

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!

VISIT TESTINAR.COM/MATH7

FOR MORE PRACTICE TESTS

PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY