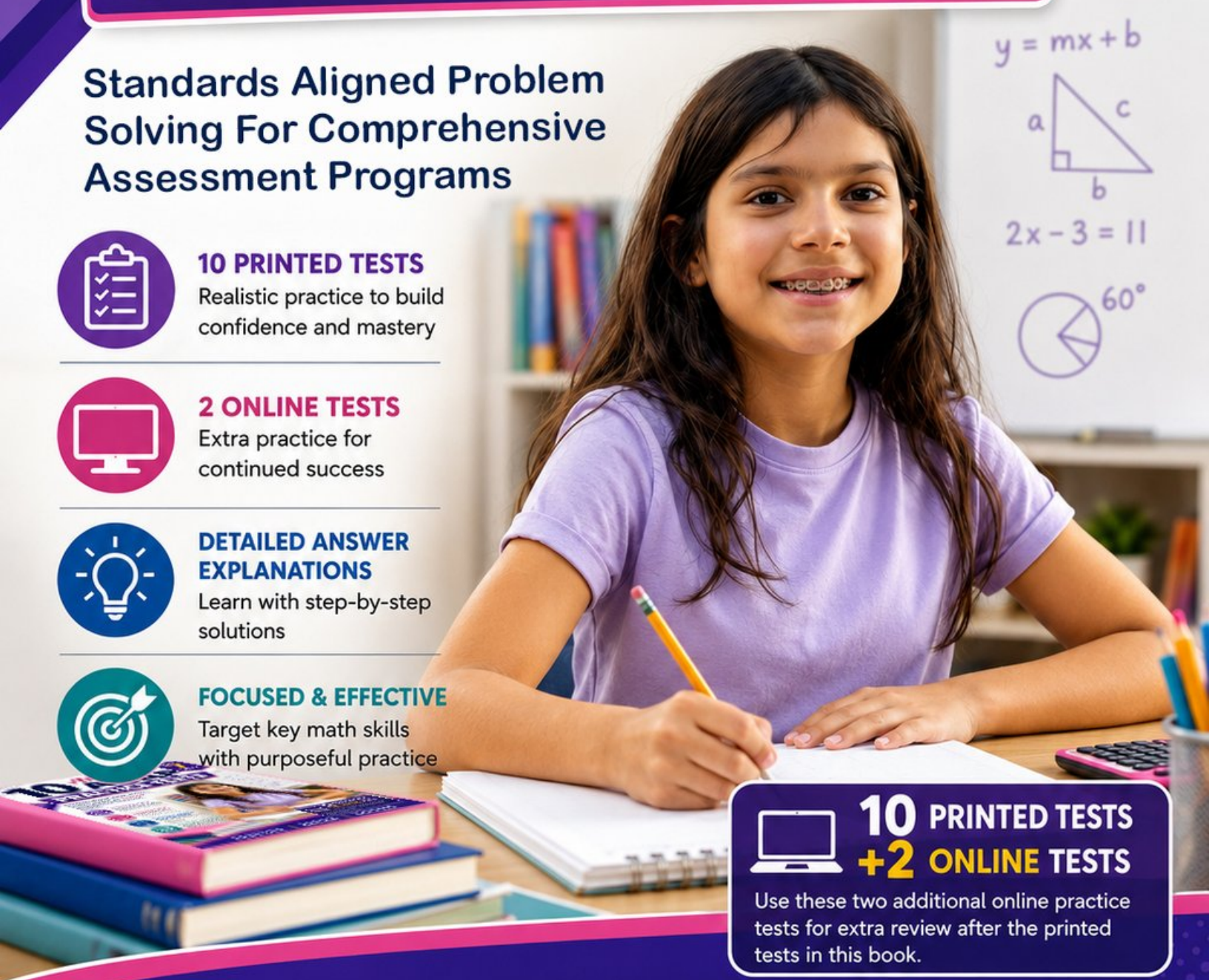
10 Montana MAST

GRADE 7 MATH

PRACTICE TESTS

Standards Aligned Problem Solving For Comprehensive Assessment Programs



10 PRINTED TESTS
Realistic practice to build confidence and mastery

2 ONLINE TESTS
Extra practice for continued success

DETAILED ANSWER EXPLANATIONS
Learn with step-by-step solutions

FOCUSED & EFFECTIVE
Target key math skills with purposeful practice

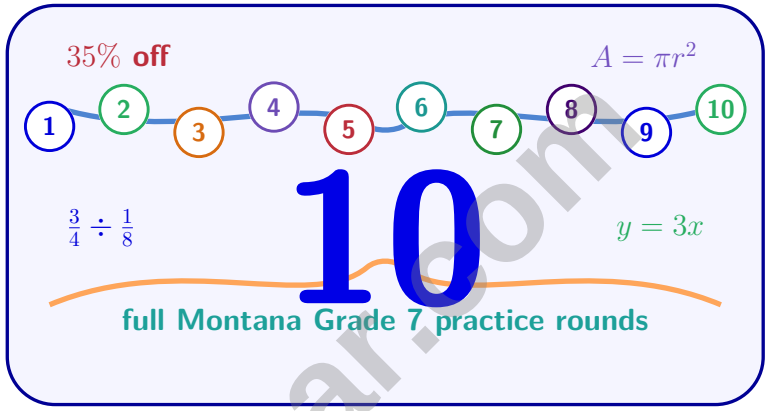
10 PRINTED TESTS +2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 Montana MAST Grade 7 Math Practice Tests

Montana Grade 7 MAST Practice for big-sky practice for ratios, scale, percent reasoning, algebra, geometry, and probability



Ten 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!

Ten focused rounds for sharper Montana MAST math thinking

This book gives you ten 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.

How to Use This Book

A ten-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?

Ten Montana MAST tests, 400 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 7–9	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final Montana round to show growth across the whole book.
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 a dataset contains 20 values and you place them in a stem-and-leaf plot, what is the median position?

☐ A. Between 10th and 11th values
☐ B. The 10th value
☐ C. The 11th value
☐ D. Between 9th and 10th values

2) Simplify: $(o^5 \cdot o^3)^2$

☐ A. o^{10}
☐ B. o^{16}
☐ C. o^{64}
☐ D. o^8

3) Solve for x: $6(x - 1) = 18$

☐ A. $x = 2$
☐ B. $x = 3$
☐ C. $x = 4$
☐ D. $x = 5$

4) Is $\sqrt{0}$ defined? If so, what is it?

☐ A. undefined
☐ B. 0
☐ C. 1
☐ D. indeterminate

5) A gym membership costs m dollars per month. With a 15% sign-up bonus (you pay less), which form is **not** equivalent to the others?

☐ A. $m - 0.15m$
☐ B. $0.85m$
☐ C. $m(0.85)$
☐ D. $1.15m$

6) A bag holds 30 marbles: 12 are red, 10 are blue, and 8 are green. What is the probability of drawing a marble that is NOT red?

☐ A. $\frac{10}{30}$
☐ B. $\frac{16}{30}$
☐ C. $\frac{3}{5}$
☐ D. $\frac{2}{5}$

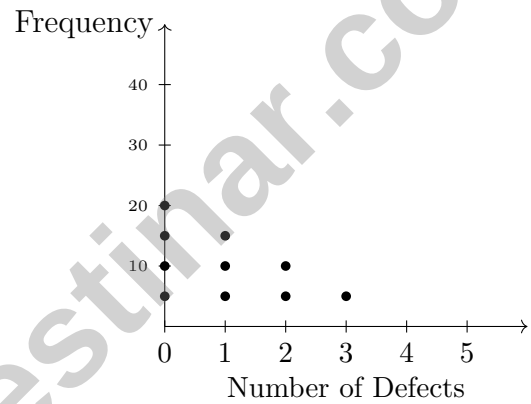
7) An ice cream shop offers 4 cone types (Sugar, Cake, Waffle, Chocolate) and 10 flavors. When ordering with cone and flavor, how many total combinations exist?

☐ A. 14
☐ B. 20
☐ C. 35
☐ D. 40

8) If the probability of rain on Monday is $\frac{1}{4}$ and the probability of rain on Tuesday is $\frac{1}{3}$, and these events are independent, what is the probability of NO rain on both days?

☐ A. $\frac{1}{6}$
☐ B. $\frac{1}{12}$
☐ C. $\frac{1}{7}$
☐ D. $\frac{1}{2}$

9) A random sample of 10 items was taken from a production line. The dot plot shows the frequency of defects per item:



Note: The column above 0 has 4 dots, column above 1 has 3 dots, column above 2 has 2 dots, column above 3 has 1 dot. Total: 10 items. Based on this sample of 10, what is the experimental probability that an item has no defects?

☐ A. $\frac{4}{10}$
☐ B. 0.45
☐ C. $\frac{1}{5}$
☐ D. 0.60

10) A farmer estimated 350 pounds of vegetables would grow, but the actual yield was 400 pounds. What is the percent error?

☐ A. 14.3%
☐ B. 85.7%
☐ C. 50%
☐ D. 12.5%

11) Expand: $8(1.5y - 2)$

☐ A. $12y - 10$
☐ B. $12y - 16$
☐ C. $8y - 16$
☐ D. $1.5y - 16$

12) A credit union member deposits $3500 in a savings account. After 4 years at 4.2% simple interest, what is the total amount in the account?

☐ A. $3588
☐ B. $3647
☐ C. $3988
☐ D. $4088

13) What is $-7 - 4$?

☐ A. 3
☐ B. -3
☐ C. -11
☐ D. 11

14) A window measures 3 feet wide and 4 feet tall. A scale drawing shows it as 1.5 inches wide. What is the height on the scale drawing?

☐ A. 1 inch
☐ B. 4 inches
☐ C. 3 inches
☐ D. 2 inches

15) A chord connects two points on a circle with radius 8 inches. What is the maximum possible length of this chord?

1) A circle has a radius of 14 meters. What is its area? Use $\pi \approx \frac{22}{7}$.

☐ A. 88 m^2
☐ B. 308 m^2
☐ C. 616 m^2
☐ D. 1232 m^2

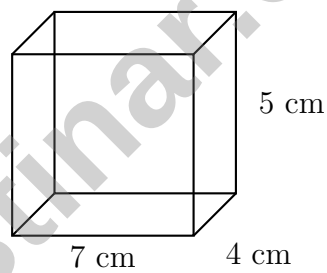
2) Two prisms have the same height of 10 cm. The first has a rectangular base 4 cm by 3 cm. The second has a triangular base with area 6 cm^2. Which prism has a larger volume?

☐ A. The rectangular prism
☐ B. The triangular prism
☐ C. Both have the same volume
☐ D. Cannot be determined

3) Expand: $9(w - 4)$

☐ A. $9w - 36$
☐ B. $9w - 4$
☐ C. $w - 36$
☐ D. $9w + 36$

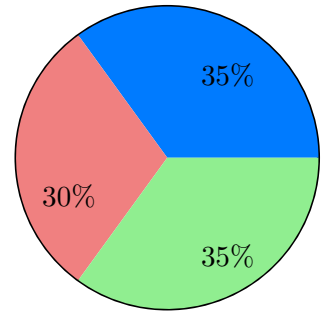
4)



The diagram shows a rectangular prism with dimensions 7 cm × 5 cm × 4 cm. What is the surface area?

☐ A. 166 cm^2
☐ B. 140 cm^2
☐ C. 256 cm^2
☐ D. 384 cm^2

5)



The circle graph above shows favorite types of cuisine at a restaurant. Blue represents Asian, red represents Italian, and green represents Mexican. If 400 customers were surveyed, how many prefer Italian?

☐ A. 120
☐ B. 140
☐ C. 160
☐ D. 280

6)

Trial	1	2	3	4	5
Successes	22	28	25	27	23
Trials per Run	100	100	100	100	100

Five separate simulations each perform 100 trials and record the number of successes. What is the average estimated probability across all five simulations?

☐ A. 0.23
☐ B. 0.25
☐ C. 0.27
☐ D. 0.30

7) Evaluate $\frac{x}{3} + 2y$ when $x = 9$ and $y = -2$.

☐ A. -1
☐ B. 1
☐ C. 7
☐ D. 9

1) A rectangular garden is 10 m wide and 8 m tall. A triangular section is removed from the bottom, with the triangle's base being 10 m and height 2 m. What is the remaining area?

☐ A. 70 m^2
☐ B. 80 m^2
☐ C. 90 m^2
☐ D. 100 m^2

2) A survey of 1000 people shows that 7% prefer decaf coffee. How many people prefer decaf coffee?

3) Which sampling method is most likely to produce a representative sample for estimating the average test score across all seventh-grade classes in a school?

☐ A. Test only the honor students
☐ B. Randomly select 5 students from each seventh-grade class
☐ C. Test the first 30 students who turn in their tests
☐ D. Ask for volunteers to take an extra test

4) A farmer has a field with length $(8x + 3)$ m and width $(5x - 2)$ m. What is the perimeter?

☐ A. $26x + 2$
☐ B. $13x + 1$
☐ C. $26x + 1$
☐ D. $40x + 6$

5) Simplify: $\frac{(u^4)^2}{u^3}$

☐ A. u^5
☐ B. u^{11}
☐ C. u^8
☐ D. u^{24}

6) A pizza restaurant charges \$12 for a large pizza and \$2 for each topping. If the total is \$22, which equation represents t, the number of toppings?

☐ A. $2 + 12t = 22$
☐ B. $12 + 2t = 22$
☐ C. $12(t + 2) = 22$
☐ D. $2t = 22 + 12$

7) If the equation $\frac{3x}{4} - 1 = 5$ is solved, what is the first operation to perform?

☐ A. Divide by 3
☐ B. Multiply by 4
☐ C. Add 1
☐ D. Subtract 4

8) Solve for x: $4(x - 3) = 12$

☐ A. $x = 0$
☐ B. $x = 3$
☐ C. $x = 6$
☐ D. $x = 9$

9) A spinner has 8 equal sections. If it is spun 240 times, approximately how many times would you expect one specific section to appear?

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.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice A is correct.** 7.SP.1-7.SP.4 For $n = 20$ (even), median is between positions $n/2 = 10$ and $n/2 + 1 = 11$.
2) **Choice B is correct.** 7.EE.1-7.EE.2 Apply product rule inside parentheses: $o^5 \cdot o^3 = o^8$. Then power rule: $(o^8)^2 = o^{8\times 2} = o^{16}$.
3) **Choice C is correct.** 7.EE.4a Distribute: $6x - 6 = 18$. Add 6: $6x = 24$. Divide by 6: $x = 4$.
4) **Choice B is correct.** 7.NS.1-7.NS.3 $\sqrt{0}$ is defined and equals 0 because $0 \times 0 = 0$.
5) **Choice D is correct.** 7.EE.1-7.EE.2 A 15% discount gives $m - 0.15m = 0.85m = m(0.85)$. Choice D, $1.15m$, represents a markup, not a discount.
6) **Choice C is correct.** 7.SP.5-7.SP.8 Non-red: $10 + 8 = 18$. $P(\text{not red}) = \frac{18}{30} = \frac{3}{5}$.
7) **Choice D is correct.** 7.SP.5-7.SP.8 Cone types: 4; flavors: 10. Total: $4 \times 10 = 40$ combinations.
8) **Choice D is correct.** 7.SP.5-7.SP.8 $P(\text{no rain Mon}) = 1 - \frac{1}{4} = \frac{3}{4}$; $P(\text{no rain Tues}) = 1 - \frac{1}{3} = \frac{2}{3}$. Both: $\frac{3}{4} \cdot \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$.
9) **Choice A is correct.** 7.SP.6 From the dot plot, 0 defects appears 4 times. Total items in sample: $4 + 3 + 2 + 1 = 10$. Experimental probability of no defects: $\frac{4}{10} = \frac{2}{5} = 0.40$.
10) **Choice D is correct.** 7.RP.3 Percent error $= \frac{|350-400|}{400} \times 100\% = \frac{50}{400} \times 100\% = 12.5\%$.
11) **Choice B is correct.** 7.EE.1-7.EE.2 Distribute 8: $8(1.5y) - 8(2) = 12y - 16$.
12) **Choice D is correct.** 7.RP.3 $I = 3500 \times 0.042 \times 4 = \$588$. $A = 3500 + 588 = \$4088$.
13) **Choice C is correct.** 7.NS.1-7.NS.3 $-7 - 4 = -7 + (-4) = -11$.
14) **Choice D is correct.** 7.RP.1-7.RP.3 Scale factor: 3 ft/1.5 in = 2 ft per inch. Height: $4 \div 2 = 2$ inches.
15) **The correct answer is** 16 **.** 7.G.4-7.G.6 The longest chord is the diameter: $d = 2r = 2 \times 8 = 16$ inches.
16) **Choice D is correct.** 7.RP.3 If $16 = 0.80 \times a$, then $a = \frac{16}{0.80} = 20$ attempts.
17) **Choice D is correct.** 7.RP.3 Selling price = cost + markup = $25 + 5 = \$30$. (The markup represents \$5/\$25 = 20% of the cost.)
18) **The correct answer is** 16 **.** 7.G.4-7.G.6 Circumference $= \pi d = 3.14 \times 0.6 = 1.884$ m. Rotations $= 30 \div 1.884 \approx 16$.
19) **The correct answer is A,C.** 7.SP.3 A is correct: clustering at 100–120 indicates consistency. C is correct: spread from 60–160 indicates greater variability. B is unsupported (total traffic, not visible). D is false (clearly different patterns).
20) **Choice D is correct.** 7.NS.1b Balance $= 28 + (-35) = -7$. She owes \$7 (or is short \$7).
21) **Choice C is correct.** 7.SP.1-7.SP.4 27% of $800 = 0.27 \times 800 = 216$ cookies.
22) **Choice C is correct.** 7.SP.5-7.SP.8 Relative frequency $= \frac{18}{60} = 0.30$.
23) **Choice C is correct.** 7.EE.1-7.EE.2 Substitute: $3(4) - 2(-3) = 12 + 6 = 18$.
24) **The correct answer is** 0.07 **.** 7.SP.1-7.SP.4 Compute $0.15 - 0.08 = 0.07$.
25) **Choice B is correct.** 7.EE.1 These have different exponents (x^1 vs. x^2), so they are not like terms.
26) **Choice A is correct.** 7.EE.1-7.EE.2 GCF of 14 and 21 is 7. The second term has no variable factor.
27) **Choice A is correct.** 7.EE.4b Total spending (book + pen) must not exceed \$50, so $12 + p \leq 50$.
28) **Choice C is correct.** 7.NS.1-7.NS.3 $(-360) \div 4 = -90$ indicates each person's debt (or share) is \$90 (or $-\$90$ in ledger terms).
29) **Choice B is correct.** 7.NS.2d Divide $17 \div 50 = 0.34$. Since $50 = 2 \times 5^2$, this is a terminating decimal.
30) **Choice A is correct.** 7.NS.1-7.NS.3 Total change: $-3.20 \times 5 = -16$ dollars.
31) **Choice B is correct.** 7.NS.1-7.NS.3 Total wins $= 15 + 18 = 33$. Total losses $= 8 + 5 = 13$. Net $= 33 - 13 = 20$ wins.
32) **Choice B is correct.** 7.NS.1-7.NS.3 $6{,}800{,}000{,}000 = 6.8 \times 10^9$. Decimal moves 9 places left.
33) **Choice A is correct.** 7.EE.1-7.EE.2 Distribute the negative: $12a - 5 - 7a - 3 = (12a - 7a) + (-5 - 3) = 5a - 8$.

Author's Note

A Math Hero Moment

Hi, Math Hero!

◇ This full-length book gave you ten complete Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. You showed up for Grade 7 practice again and again. That is what real growth looks like: steady effort, honest review, and a willingness to try. ◇

⋆ **Remember this:** A math hero is not someone who never misses a question. A math hero learns from the miss and comes back stronger. ⋆

Hero Habits

- **Courage:** You try problems that are not automatic.
- **Honesty:** You review what needs work.
- **Patience:** You let skills grow over time.
- **Pride:** You recognize the effort you gave.

Grade 7 test-day tip: Save one solved problem you are proud of. Looking back at progress helps motivation stay strong.

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

Jay Daie

Your Math Hero Guide

PRACTICE TODAY.
SUCCEED TOMORROW!

This book includes 10 full-length Math practice tests and 2 extra 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:

- **10** 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
- Fractions & Decimals
- Percents
- Statistics & Probability
- Data Analysis
- Measurement & Conversions
- And More!

2 EXTRA 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 AND LEARNING RESOURCES.

PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED