

6 MONTANA MAST

GRADE

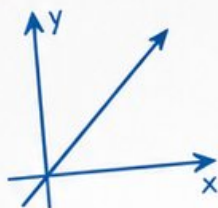
7

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



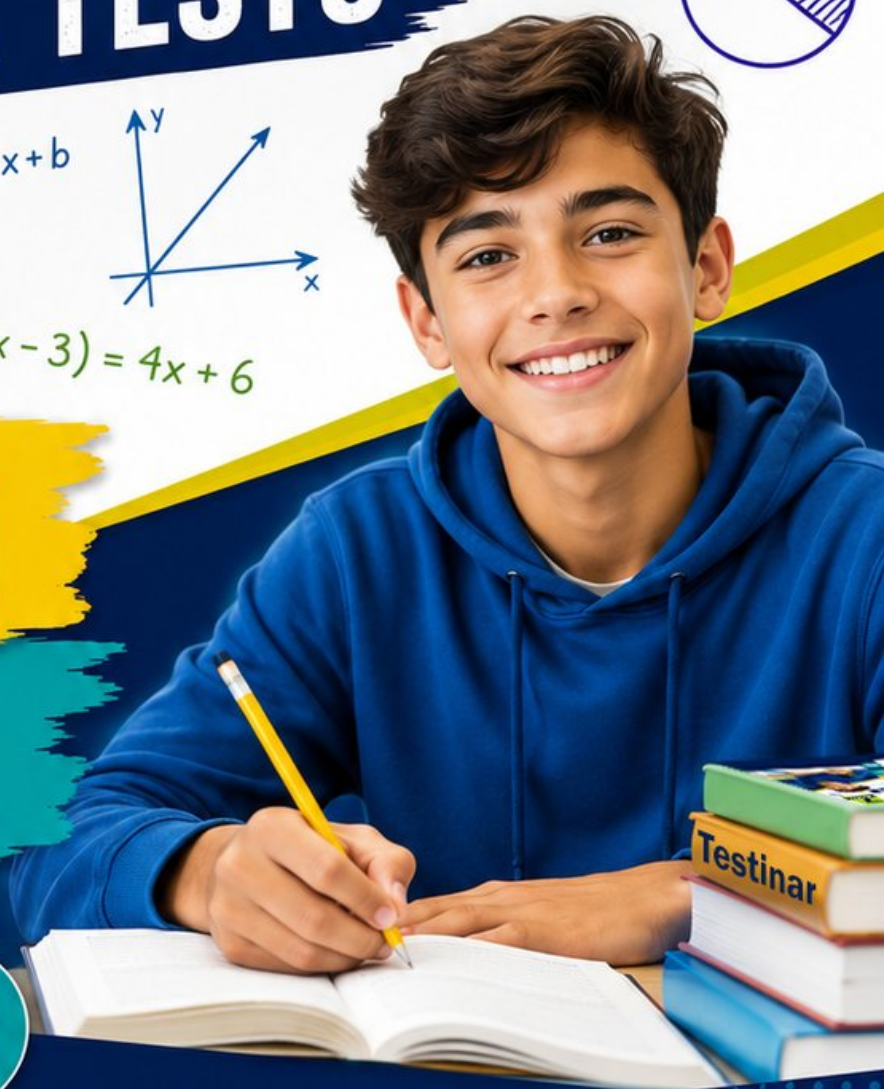
Strengthen
Math Skills



Detailed Answers
& Explanations

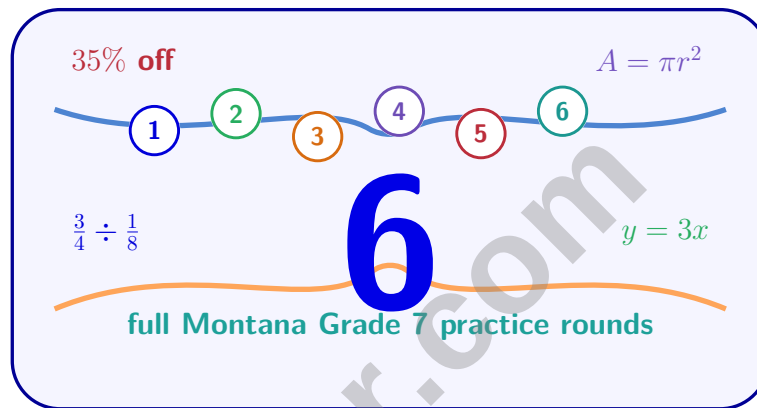


Improve Test
Performance



6 Montana MAST Grade 7 Math Practice Tests

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



Six 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



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Montana Grade 7 Problem Solver!

Six focused rounds for sharper MAST math thinking

This book gives you six 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 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.

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?

Six MAST 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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	29
★ Practice Test 3	_____	43
★ Practice Test 4	_____	57
★ Practice Test 5	_____	73
★ Practice Test 6	_____	88
Practice Test Answer Keys	_____	102
Practice Test Answers and Explanations	_____	106

- 1) Chen invests \$2,500 at 6% annual compound interest. After 2 years, how much interest will he have earned?

☐ A. \$300

☐ C. \$318.60

☐ B. \$612

☐ D. \$309

- 2) Jenna joins a gym with a membership fee of \$50 and monthly charges of \$25. Let m represent the number of months. Which equation shows the total cost T including the membership fee?

☐ A. $T = 50m + 25$
☐ C. $T = 50 + 25m$
☐ B. $T = 25(m + 50)$
☐ D. $T = (50 + 25)m$

3)

Part	Whole
12	48

What is the percent represented in the table?

☐ A. 12%

☐ C. 36%

☐ B. 48%

☐ D. 25%

- 4) A television network wants to know what percentage of households in the United States watch sports. It surveys viewers who call into its sports hotline. Why is this a biased sample?

☐ A. It only includes people who already watch sports and made the effort to call

☐ C. It has no bias because hotline numbers are public

☐ D. The sample size is too small

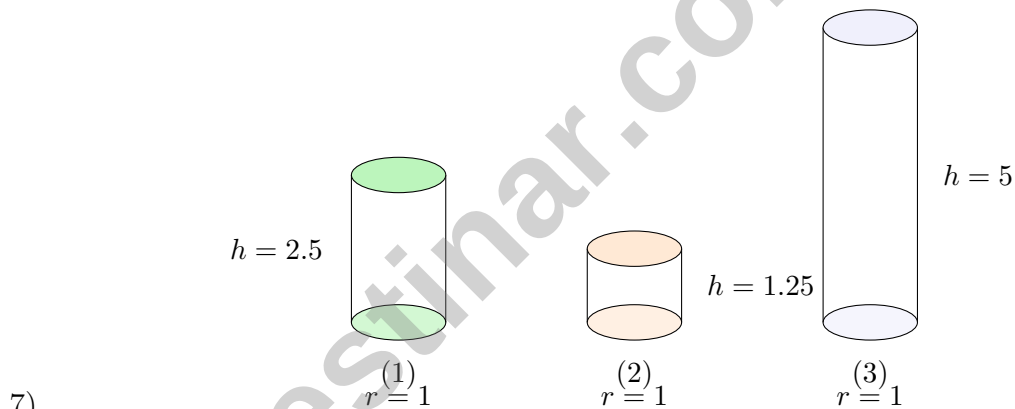
☐ B. It uses random sampling


5) A spinner with unequal sections is spun many times in a simulation. The relative frequency of one outcome converges to 0.32 after 10000 spins. What does this tell you about the theoretical probability of that outcome?

- ☐ A. The theoretical probability is exactly 0.32
 ☐ C. The theoretical probability is less than 0.32
☐ B. The theoretical probability is approximately 0.32
 ☐ D. The theoretical probability cannot be determined from this information

6) A fair coin is flipped. What is the theoretical probability of getting heads?

- ☐ A. $\frac{1}{4}$
☐ C. $\frac{1}{2}$
☐ B. $\frac{1}{3}$
☐ D. 1



Three cylinders all have $r = 1$ cm and different heights: $h = 2.5, 1.25, 5$ cm. If you order them by volume from smallest to largest, which is correct? Use $\pi \approx 3.14$.

- ☐ A. (1), (2), (3)
 ☐ C. (3), (1), (2)
☐ B. (2), (1), (3)
 ☐ D. (1), (3), (2)



Scan me!
For more practice
& answers

8) A store tracks daily sales over two weeks:

Week 1	Week 2
\$450, \$460, \$455, \$465, \$450	\$300, \$500, \$450, \$550, \$400

Which week is more predictable for planning inventory?

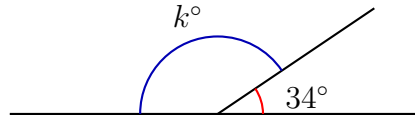
- ☐ A. Week 1 (clustered sales around \$456)
 ☐ C. Both are equally predictable
- ☐ B. Week 2 (higher maximum sales)
 ☐ D. Week 2 (more variety in customer base)
- 9) A histogram shows customer wait times (in minutes) at a restaurant: 0–5 min (8 customers), 5–10 min (12 customers), 10–15 min (6 customers), 15–20 min (4 customers). What can you conclude about typical wait time?
- ☐ A. Most customers wait 0–5 minutes
 ☐ C. Most customers wait 15–20 minutes
- ☐ B. Most customers wait 5–10 minutes
 ☐ D. Wait times are evenly distributed
- 10) A spinner with 4 equal sections (1, 2, 3, 4) is spun, and a coin is flipped. How many favorable outcomes result in spinning a number greater than 2 and flipping Heads?
- ☐ A. 1
 ☐ C. 4
- ☐ B. 2
 ☐ D. 8
- 11) A bag contains 4 red, 3 blue, and 2 green marbles. If one marble is drawn at random, what is the probability it is NOT blue?
- ☐ A. $\frac{3}{9}$
☐ C. $\frac{4}{9}$
- ☐ B. $\frac{6}{9}$
☐ D. $\frac{2}{9}$



- 1) A test for a new medicine was conducted on 1000 patients. 850 patients showed improvement. What is the experimental probability that a patient will show improvement?

- ☐ A. 0.15 ☐ C. 1.18
☐ B. 0.85 ☐ D. 1.76

2)



A ray extends upward from a point on a horizontal line, creating angles of 34° and k° . These angles form a linear pair. What is the measure of angle k ?

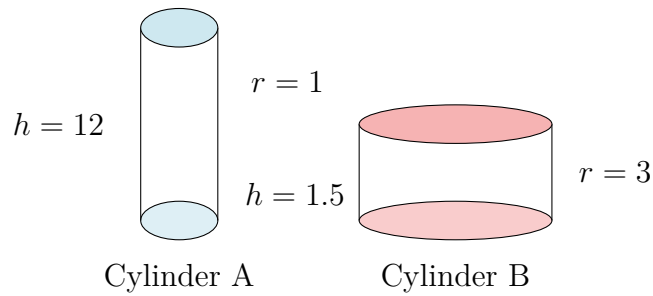
- ☐ A. 34° ☐ C. 90°
☐ B. 56° ☐ D. 146°
- 3) An item originally marked at \$80 is reduced to \$60. What is the percent decrease?
- ☐ A. 20% ☐ C. 30%
☐ B. 33% ☐ D. 25%
- 4) A box plot shows test scores with minimum 45, $Q1 = 65$, median = 75, $Q3 = 85$, maximum = 95. What is the interquartile range (IQR)?



Scan me!
For more practice
& answers

- 5) A spinner has 6 equal sections. To simulate rolling a standard die once, how many trials are needed if we spin once per trial?
- ☐ A. 1 trial ☐ C. 6 trials
☐ B. 2 trials ☐ D. 36 trials
- 6) A spinner is divided into 8 equal sections numbered 1 through 8. What is the probability of spinning an odd number OR a prime number?
- ☐ A. $\frac{4}{8}$ (only odd) ☐ C. $\frac{7}{8}$
☐ B. $\frac{6}{8}$ (missing overlap) ☐ D. $\frac{8}{8}$ (all outcomes)
- 7) A mechanic estimated a car repair would take 3 hours but it took 4.5 hours. What is the percent error?
- ☐ A. 33.3% ☐ C. 40%
☐ B. 50% ☐ D. 66.7%
- 8) Expand: $-7(3n - 2)$
- ☐ A. $-21n - 14$ ☐ C. $-21n + 14$
☐ B. $21n - 14$ ☐ D. $-10n - 2$
- 9) What is $-2 - (-6)$?
- ☐ A. 4 ☐ C. -4
☐ B. -8 ☐ D. 8
- 10) A dollhouse is built to a scale of 1 : 12 (model to real). If an actual bedroom is 12 feet long, 10 feet wide, and 8 feet tall, what is the volume of the dollhouse bedroom in cubic feet?
- ☐ A. 960×12 cubic feet ☐ C. 960 cubic feet
☐ B. $\frac{960}{12}$ cubic feet ☐ D. $\frac{960}{1728}$ cubic feet





1)

Cylinder A has $r = 1$ and $h = 12$. Cylinder B has $r = 3$ and $h = 1.5$. Use $\pi \approx 3.14$. Which statement is true?

- ☐ A. Cylinder A has the greater volume ☐ D. Volume cannot be compared without units
☐ B. Cylinder B has the greater volume
☐ C. Both cylinders have the same volume

2) A circular table has an area of 201.04 square inches. What is the diameter of the table? Use $\pi \approx 3.14$.

- ☐ A. 8 inches ☐ C. 32 inches
☐ B. 16 inches ☐ D. 64 inches

3) A class splits into two study groups. Group X: median = 82, IQR = 8. Group Y: median = 82, IQR = 14. Which group has more consistent performance?

- ☐ A. Group X (smaller IQR) ☐ C. Both are equally consistent
☐ B. Group Y (larger IQR means more diversity) ☐ D. Cannot determine without range



- 4) A researcher collects data on the relationship between hours of sleep and performance on a math test for 20 students. Some data points show students who slept 7 hours and scored 60, while others slept 7 hours and scored 95. What does this variation BEST indicate?
- ☐ A. Sleep has no effect on test performance
☐ B. Sleep alone does not determine test scores; other factors matter
☐ C. The data is incorrect because the same sleep results in different scores
☐ D. Students who sleep 7 hours have inconsistent abilities
- 5) A spinner with sections 1, 2, 3, 4, 5 is spun, and a coin is flipped. How many outcomes have an odd number and Heads?
- ☐ A. 2
☐ B. 3
☐ C. 5
☐ D. 10
- 6) 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)
☐ B. Group Q (sent very few messages)
☐ C. Both groups sent identical messages
☐ D. Group Q was more focused
- 7) A coin is flipped and a die is rolled together in a compound experiment. Out of 240 trials, heads AND rolling a 5 occurred 18 times. What is the experimental probability of both events?
- ☐ A. $\frac{1}{12}$
☐ B. $\frac{18}{240}$
☐ C. 0.10
☐ D. $\frac{1}{8}$



Scan me!
For more practice
& answers

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.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.RP.3) Balance after 2 years: $2500(1.06)^2 = 2809$. Interest earned: $2809 - 2500 = 309$.
- 2) **Choice C is correct.** (7.EE.4a) The one-time membership is \$50 plus \$25 each month, so $T = 50 + 25m$.
- 3) **Choice D is correct.** (7.RP.3) Using the proportion $\frac{12}{48} = \frac{p}{100}$, simplify $\frac{12}{48} = \frac{1}{4} = 0.25 = 25\%$.
- 4) **Choice A is correct.** (7.SP.1-7.SP.4) This sample only reaches people who (1) already watch sports, and (2) are motivated enough to call in. This excludes the majority of households and creates severe self-selection bias and voluntary response bias.
- 5) **Choice B is correct.** (7.SP.5-7.SP.8) By the Law of Large Numbers, as the number of trials increases, the relative frequency (experimental probability) converges to the theoretical probability. With 10000 spins, the relative frequency of 0.32 is a strong estimate of the true theoretical probability.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) A fair coin has two equally likely outcomes: heads and tails. $P(\text{heads}) = \frac{1}{2}$.
- 7) **Choice B is correct.** (7.G.4-7.G.6) (1): $V = \pi r^2 h = 3.14 \times (1)^2 \times 2.5 = 7.85 \text{ cm}^3$. (2): $V = 3.14 \times (1)^2 \times 1.25 = 3.925 \text{ cm}^3$. (3): $V = 3.14 \times (1)^2 \times 5 = 15.7 \text{ cm}^3$. Order: (2) < (1) < (3).
- 8) **Choice A is correct.** (7.SP.1-7.SP.4) Week 1: \$450–465 (range = 15, mean = 456, tight cluster). Week 2: \$300–550 (range = 250, mean = 440, highly variable). Week 1 is much more predictable for planning.
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) The 5–10 minute interval has the highest frequency (12 customers), so it represents the typical (mode interval) wait time.
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) Numbers greater than 2: $\{3, 4\} = 2$ outcomes. Heads: 1 outcome. Favorable: 3H, 4H = 2 outcomes.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) Total marbles: 9. Blue marbles: 3. Not blue: $9 - 3 = 6$. Probability: $\frac{6}{9} = \frac{2}{3}$.
- 12) **Choice A is correct.** (7.SP.6) Relative frequency of blue: $\frac{216}{800} = 0.27$. Apply this to predict in a larger sample: $0.27 \times 1200 = 324$ expected blue draws.
- 13) **Choice B is correct.** (7.SP.5-7.SP.8) $0.4 = \frac{4}{10} = \frac{2}{5}$ (simplified form).
- 14) **Choice B is correct.** (7.SP.1-7.SP.4) Set up the proportion: $\frac{18}{50} = \frac{x}{800}$. Solve: $x = \frac{18 \times 800}{50} = 288$.
- 15) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|\text{estimate} - \text{actual}|}{|\text{actual}|} \times 100\% = \frac{|7 - 8|}{8} \times 100\% = 12.5\%$.
- 16) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute 2: $2(3x) + 2(4) = 6x + 8$. The area model shows the two parts: $6x$ and 8.
- 17) **Choice D is correct.** (7.NS.1-7.NS.3) $2 - 5 = 2 + (-5) = -3$. Check: $A = 7$, $B = -3$, $C = -5$, $D = -9$.
- 18) **Choice D is correct.** (7.RP.1-7.RP.3) Model length in meters: $200 \div 200 = 1$ meter = 100 cm.
- 19) **Choice D is correct.** (7.RP.3) $I = 1200 \times 0.03 \times 2 = \72 .
- 20) **The correct answer is B,C.** (7.G.1-7.G.5) B and C are both correct. When two lines intersect, they form two pairs of vertical angles (congruent pairs) and four pairs of supplementary adjacent angles. One angle is 73° ; its vertical angle is also 73° (C). The adjacent angles are each $180 - 73 = 107^\circ$. So the four angles are: 73° , 107° , 73° , 107° (B). A is false (not all 73°). D is technically true but already covered in B.
- 21) **The correct answer is $(-6, 3)$.** (7.G.1-7.G.5) A 180° rotation about the origin uses the rule $(a, b) \rightarrow (-a, -b)$. If the image is $(6, -3)$, then $(-a, -b) = (6, -3)$, so $a = -6$ and $b = 3$. Thus the original point is $(a, b) = (-6, 3)$.
- 22) **The correct answer is 12.** (7.G.1-7.G.5) Area ratio 4 : 9 gives linear scale factor $\sqrt{4} : \sqrt{9} = 2 : 3$. Larger base = $8 \times \frac{3}{2} = 12$ cm.
- 23) **Choice C is correct.** (7.SP.1-7.SP.4) 32% of 450 = $0.32 \times 450 = 144$ customers.
- 24) **Choice D is correct.** (7.RP.3) 25% of 80 is $\frac{1}{4} \times 80 = 20$.
- 25) **Choice C is correct.** (7.RP.3) Tax = $0.12 \times 250 = \$30$. Total = $250 + 30 = \$280$.
- 26) **Choice D is correct.** (7.NS.1b) If -6 plus an unknown value equals 9, then the unknown is 15 because $-6 + 15 = 9$. The distance from -6 to 9 is 15 units.
- 27) **Choice B is correct.** (7.EE.1-7.EE.2) The ratio is 2 cups flour per 1 cup sugar, so $f = 2s$.



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!

Don't lose it—your extra practice and success start here!



VISIT [TESTINAR.COM/MATH7](https://www.testinar.com/math7)
FOR MORE PRACTICE TESTS



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY