

5

Vermont VTCAP

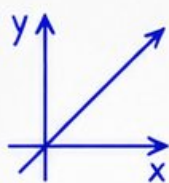
GRADE

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



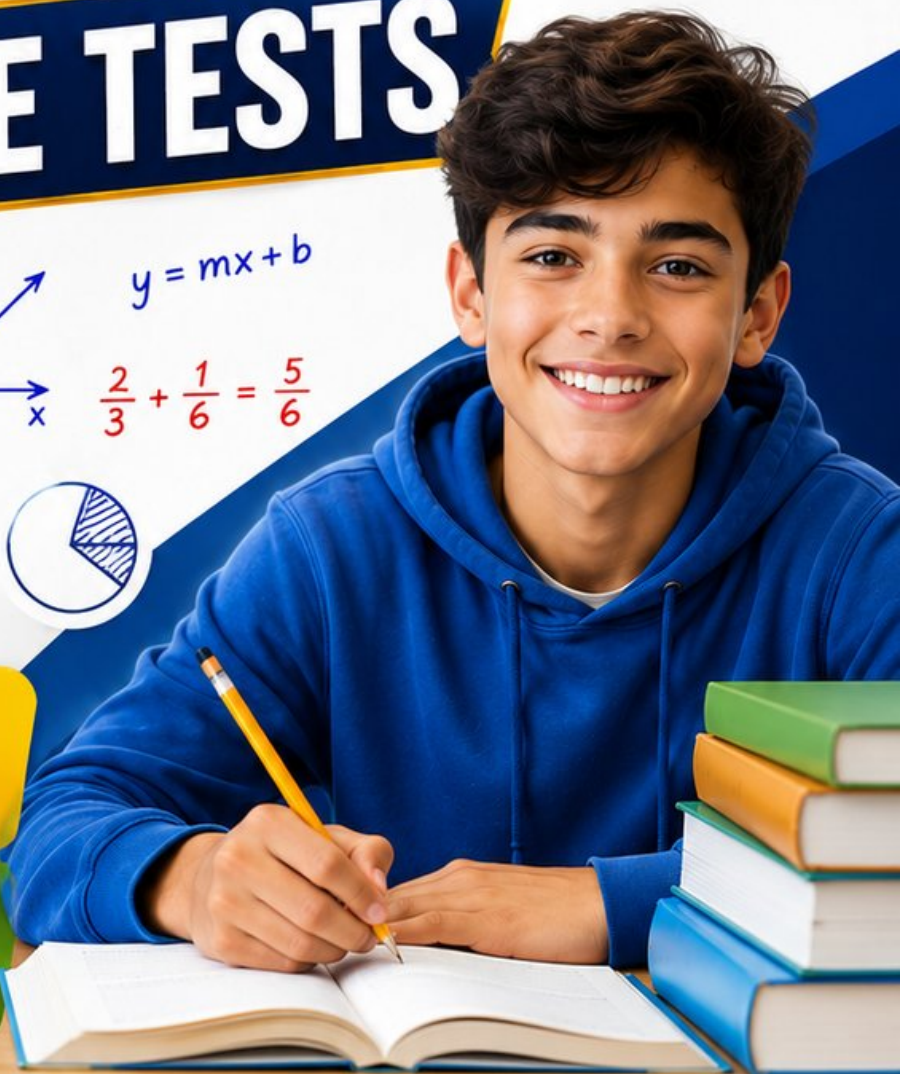
Strengthen
Math Skills



Detailed Answers
& Explanations

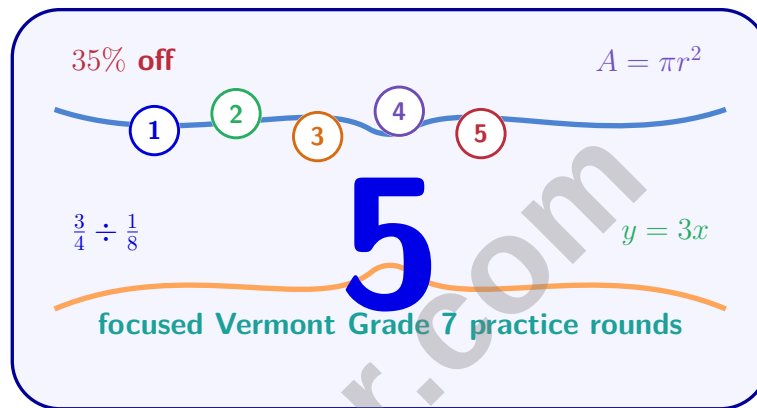


Improve Test
Performance



5 Vermont VTCAP Grade 7 Math Practice Tests

Targeted Grade 7 Practice with Review Tools and Full Answer Support



Five complete 40-question Grade 7 VTCAP 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, Vermont Grade 7 Problem Solver!

Five focused rounds for sharper VTCAP math thinking

This book gives you five full Grade 7 VTCAP 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 Vermont 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.

Vermont 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 VTCAP 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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	13
★ Practice Test 2	_____	28
★ Practice Test 3	_____	44
★ Practice Test 4	_____	59
★ Practice Test 5	_____	73
Practice Test Answer Keys	_____	88
Practice Test Answers and Explanations	_____	92

Perfect Squares

1	4	9
16	25	36
49	64	81
100	121	144

1)

What is $\sqrt{81}$?☐ A. 8☐ C. 10☐ B. 9☐ D. 11

2) A textbook page is 8 inches by 10 inches. For a digital version, the page is scaled by a factor of 0.75. What are the digital dimensions?

☐ A. 12 inches $\times$ 15 inches☐ C. 5.33 inches $\times$ 6.67 inches☐ B. 8.75 inches $\times$ 10.75 inches☐ D. 6 inches $\times$ 7.5 inches

3) An account balance starts at -50 dollars (debt). If you subtract another 20 dollars from this account, what is the new balance?

☐ A. -30 dollars☐ C. 30 dollars☐ B. -70 dollars☐ D. 70 dollars

4) A family's monthly budget is divided as follows: housing 35%, food 20%, transportation 15%, entertainment 10%, and other 20%. If the monthly income is \$3000, how much is allocated to food?

☐ A. \$300☐ C. \$600☐ B. \$450☐ D. \$750

Scan me!
For more practice
& answers

- 5) A recipe calls for 2 cups of flour for every 5 cups of milk. What is the constant of proportionality from milk to flour?

- 6) If 25 is 10% of a number, what is the number?

☐ A. 150☐ C. 250☐ B. 200☐ D. 300

- 7) Calculate $-47 + (-26)$.

☐ A. -73 ☐ C. 21☐ B. -21 ☐ D. 73

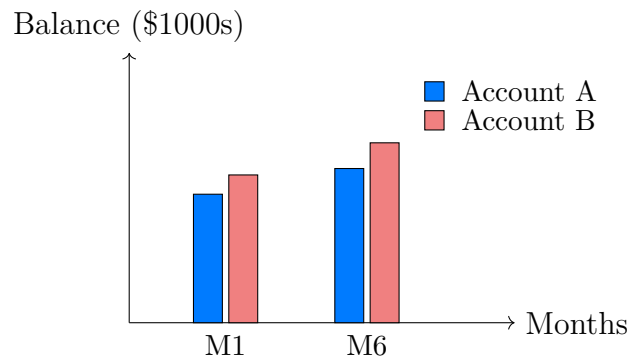
- 8) Evaluate $2(a - 3) + 5$ when $a = 5$.

☐ A. 11☐ C. 6☐ B. 8☐ D. 9

- 9) You can buy 8 pencils for $\frac{1}{2}$ dollar. How much does one pencil cost?

☐ A. \$0.04☐ C. \$0.08☐ B. \$0.16☐ D. \$0.0625

- 10) An investor compares two savings accounts over one year using the bar chart below.



If Account A earns 4% simple interest and Account B earns 6%, which account grew more after 6 months?

- ☐ A. Account A
- ☐ B. Cannot be determined
- ☐ C. Both grew equally
- ☐ D. Account B
- 11) A store offers a 32% discount on a pair of jeans originally priced at \$75. What is the sale price?

- 12) A submarine is at -245 meters. It rises 35 meters. What is its new depth?

- ☐ A. -280 m
- ☐ B. -210 m
- ☐ C. 210 m
- ☐ D. 280 m



Scan me!
For more practice
& answers

- 1) A back-to-back stem-and-leaf plot compares writing scores of two 7th-grade classes. Class 1 (left): Stem 7: Leaves 2, 5, 8, 9 | Stem 8: Leaves 1, 4, 7. Class 2 (right): Stem 7: Leaves 3, 4 | Stem 8: Leaves 0, 2, 5, 6, 8. Which statement is true?

- ☐ A. Class 1 has more students with scores in the 70s
- ☐ B. Class 2 has more students with scores in the 80s
- ☐ C. Both classes have the same number of students
- ☐ D. Class 1 has the highest single score

Sample (60 drawn):



Proportion of success: $\frac{40}{60} = \frac{2}{3} \approx 66.7\%$

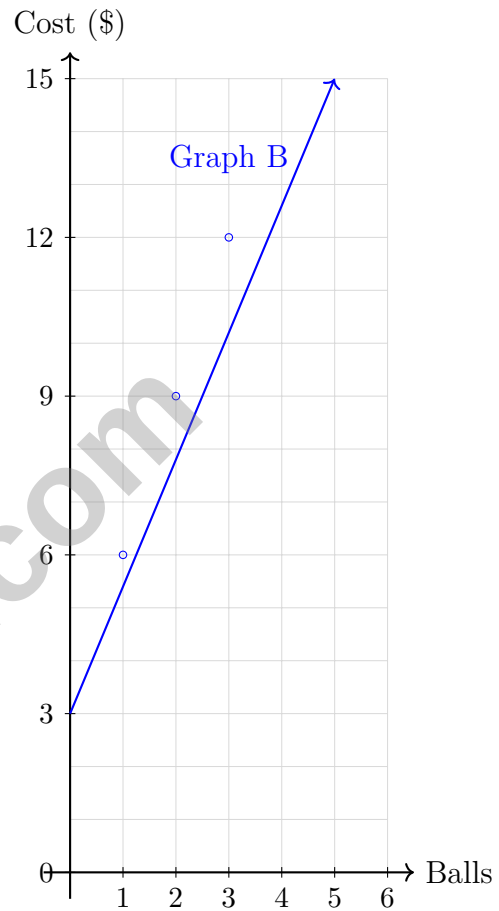
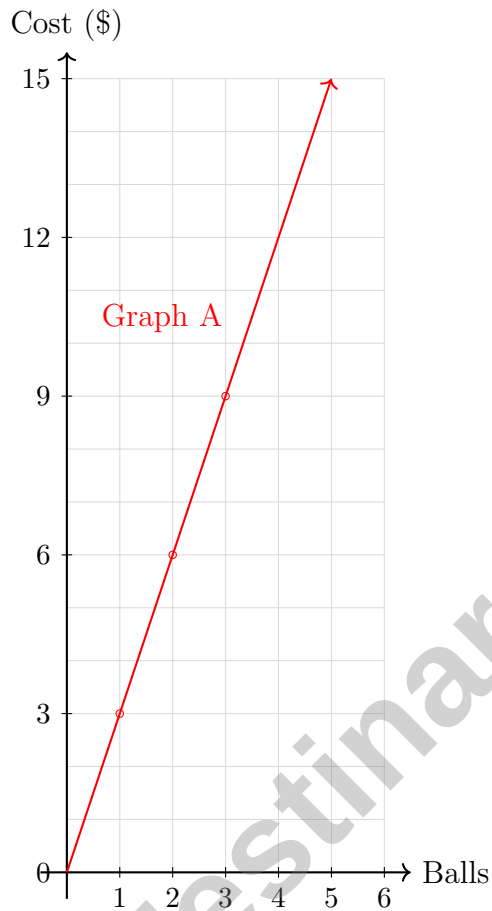
2)

If the above sample is representative, and the population has 3000 individuals, how many successes are expected in the population?

- ☐ A. 1500
- ☐ B. 1800
- ☐ C. 2000
- ☐ D. 2200
- 3) A pizza costs \$16 before tax. With a 7% sales tax, what is the total cost?
- ☐ A. \$16.07
- ☐ B. \$23
- ☐ C. \$14.88
- ☐ D. \$17.12



- 4) A craft store sells yarn for \$3 per ball. Which graph represents the cost C for b balls of yarn?



- ☐ A. Both graphs
- ☐ B. Graph B

- ☐ C. Neither graph
- ☐ D. Graph A

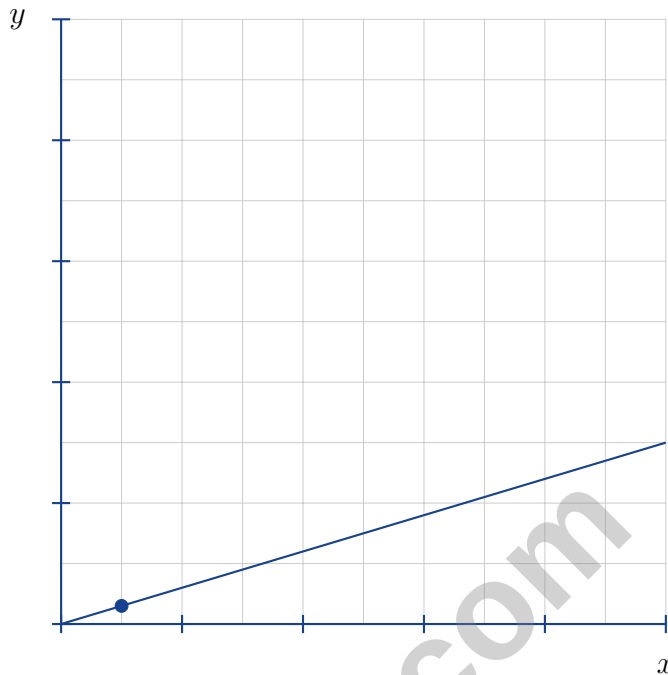


Scan me!
For more practice
& answers

- 1) Which pair of scales would produce drawings of the same size from the same actual object?
- ☐ A. 1 cm : 4 m and 2 cm : 6 m ☐ C. 3 mm : 1 m and 6 mm : 3 m
- ☐ B. 1 in : 12 ft and 1 in : 24 ft ☐ D. $\frac{1}{4}$ in : 1 ft and $\frac{1}{2}$ in : 2 ft
- 2) A microscopic organism measures 0.000003 cm. What is this measurement in scientific notation?
- ☐ A. 3×10^{-5} ☐ C. 3×10^5
- ☐ B. 3×10^{-6} ☐ D. 0.3×10^{-5}
- 3) A vehicle inspection charges a flat fee of \$45 and \$12 per system checked. If the total is \$93, which equation finds s , the number of systems?
- ☐ A. $45s + 12 = 93$ ☐ C. $12 + 45s = 93$
- ☐ B. $12s + 45 = 93$ ☐ D. $45(s + 12) = 93$
- 4) A rectangular blueprint shows a hallway as 3.6 cm by 5.4 cm at scale 1 cm : 0.8 m. If the drawing is reduced to 2.4 cm by 3.6 cm, what is the new scale?
- ☐ A. 1 cm : 0.8 m ☐ C. 1 cm : 0.53 m
- ☐ B. 1 cm : 1.2 m ☐ D. 1 cm : 1.6 m



Scan me!
For more practice
& answers



5)

Based on this graph of a proportional relationship, which statement is true?

- ☐ A. The line does not pass through the origin.
☐ B. When $x = 10$, $y = 5$.
☐ C. The equation is $y = 0.5x$.
☐ D. The unit rate is 0.3.

6) A basketball player made 18 out of 24 free throws. Use a proportion to find the percent made, then identify which step comes next.

- ☐ A. Multiply 18×24 and divide by 100
☐ B. Set up $\frac{24}{18} = \frac{100}{p}$ and cross-multiply
☐ C. Calculate $18 + 24 = 42$ and divide by 2
☐ D. Set up $\frac{18}{24} = \frac{p}{100}$ and solve using $p = \frac{18 \times 100}{24}$



Vermont VTCAP 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 Vermont VTCAP practice test.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(7.NS.1-7.NS.3)** According to the perfect squares table, $\sqrt{81} = 9$ because $9 \times 9 = 81$.
- 2) **Choice D is correct.** **(7.RP.1-7.RP.3)** Multiply each dimension by 0.75: $8 \times 0.75 = 6$ inches; $10 \times 0.75 = 7.5$ inches.
- 3) **Choice B is correct.** **(7.NS.1-7.NS.3)** $-50 - 20 = -70$. The debt increases by 20 dollars, resulting in a larger debt.
- 4) **Choice C is correct.** **(7.SP.1-7.SP.4)** 20% of $\$3000 = 0.20 \times 3000 = \600 .
- 5) **The correct answer is $\frac{2}{5}$.** **(7.RP.1-7.RP.3)** The ratio flour to milk is $2 : 5$, so the constant is $\frac{2}{5}$.
- 6) **Choice C is correct.** **(7.RP.3)** If $25 = 0.10 \times n$, then $n = \frac{25}{0.10} = 250$.
- 7) **Choice A is correct.** **(7.NS.1b)** Both numbers are negative. Add absolute values: $|-47| + |-26| = 47 + 26 = 73$. Keep the negative sign: $-47 + (-26) = -73$.
- 8) **Choice D is correct.** **(7.EE.1-7.EE.2)** Substitute: $2(5 - 3) + 5 = 2(2) + 5 = 4 + 5 = 9$.
- 9) **Choice D is correct.** **(7.RP.1-7.RP.3)** Cost per pencil = $\frac{1/2}{8} = \frac{1}{2} \times \frac{1}{8} = \frac{1}{16} = 0.0625$ dollars.
- 10) **Choice D is correct.** **(7.RP.3)** Account B at 6% earns more growth than Account A at 4% over the same period. The chart reflects this with the higher bar for Account B at Month 6.
- 11) **The correct answer is \$51.** **(7.RP.3)** Discount amount = $0.32 \times 75 = \$24$. Sale price = $75 - 24 = \$51$.
- 12) **Choice B is correct.** **(7.NS.1-7.NS.3)** $-245 + 35 = -210$ meters.
- 13) **The correct answer is 2.** **(7.RP.3)** $180 = 1500 \times 0.06 \times t \Rightarrow 180 = 90t \Rightarrow t = 2$ years.
- 14) **Choice A is correct.** **(7.NS.1-7.NS.3)** Final score = $-250 + 180 - 120 + 200 = 10$ points.
- 15) **Choice B is correct.** **(7.NS.1-7.NS.3)** $8,900,000,000 = 8.9 \times 10^9$. Count 9 places from right of first digit to decimal point.
- 16) **Choice D is correct.** **(7.RP.1-7.RP.3)** Cost = $50 + 8n$. The constant term 50 makes this non-proportional.
- 17) **Choice D is correct.** **(7.RP.1-7.RP.3)** Unit rate = $240 \div 8 = 30$ widgets per hour.
- 18) **Choice C is correct.** **(7.RP.3)** Increase: $\frac{15}{100} \times 5000 = 750$. New revenue: $5000 + 750 = \$5750$.
- 19) **Choice A is correct.** **(7.NS.1-7.NS.3)** Net change = Final temp - Initial temp = $-2 - (-4) = -2 + 4 = 2^\circ\text{C}$.
- 20) **Choice C is correct.** **(7.NS.1-7.NS.3)** Division by zero is undefined in mathematics. You cannot divide any number (positive, negative, or zero) by zero. Therefore $(-18) \div 0$ is **undefined**.
- 21) **The correct answer is A, C.** **(7.SP.1-7.SP.4)** Sample 1: $\frac{48}{200} = 0.24$; Sample 2: $\frac{36}{150} = 0.24$; Sample 3: $\frac{60}{250} = 0.24$. All are equal, so A is correct. These proportions can be used to estimate the full population (C). B is false (all equal), D is misleading, and E contradicts the actual data.
- 22) **Choice A is correct.** **(7.EE.1-7.EE.2)** A 25% increase is $40(1 + 0.25) = 40(1.25) = 50$.
- 23) **Choice C is correct.** **(7.SP.5-7.SP.8)** The 180° sector represents $\frac{180}{360} = \frac{1}{2}$ of the spinner, the largest fraction. This is a non-uniform model.
- 24) **Choice D is correct.** **(7.RP.3)** Commission on package = commission rate $\times$ package cost = $0.05 \times 2000 = \$100$. Insurance does not affect the commission calculation on the base package.
- 25) **Choice A is correct.** **(7.NS.2)** $-\frac{7}{8} \times 8 = \frac{-7 \times 8}{8} = -7$. The 8's cancel.
- 26) **Choice A is correct.** **(7.SP.3)** Club 1's data clusters at 22–28 pages with peak at 25 (range 10). Club 2 spreads from 10–40 pages (range 30), showing inconsistent reading habits.
- 27) **Choice B is correct.** **(7.G.4-7.G.6)** Start with the large rectangle: $12 \times 9 = 108 \text{ ft}^2$. Subtract the cutout rectangle: $4 \times 3 = 12 \text{ ft}^2$. Remaining area: $108 - 12 = 96 \text{ ft}^2$.
- 28) **Choice D is correct.** **(7.RP.1-7.RP.3)** Proportion: $\frac{1}{0.62} = \frac{300}{x}$. So $x = 300 \times 0.62 = 186$ miles.
- 29) **Choice C is correct.** **(7.RP.3)** Housing budget: $0.40 \times 3000 = \$1200$.
- 30) **Choice D is correct.** **(7.RP.3)** For doubling: $(1 + r)^{10} = 2 \Rightarrow 1 + r = 2^{1/10} \approx 1.0718 \Rightarrow r \approx 7.18\%$. Check: $(1.07)^{10} \approx 1.967 \approx 2.0$.
- 31) **Choice D is correct.** **(7.RP.1-7.RP.3)** $k = 24/2 = 12$ blooms per pound. Verify: $36/3 = 12$ and $54/4.5 = 12$.



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!



VISIT **TESTINAR.COM/MATH7**
FOR MORE PRACTICE TESTS



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY