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CONNECTICUT

Smarter Balanced

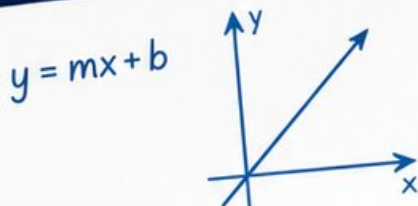
GRADE

7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs



$$2(x - 3) = 4x + 6$$



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



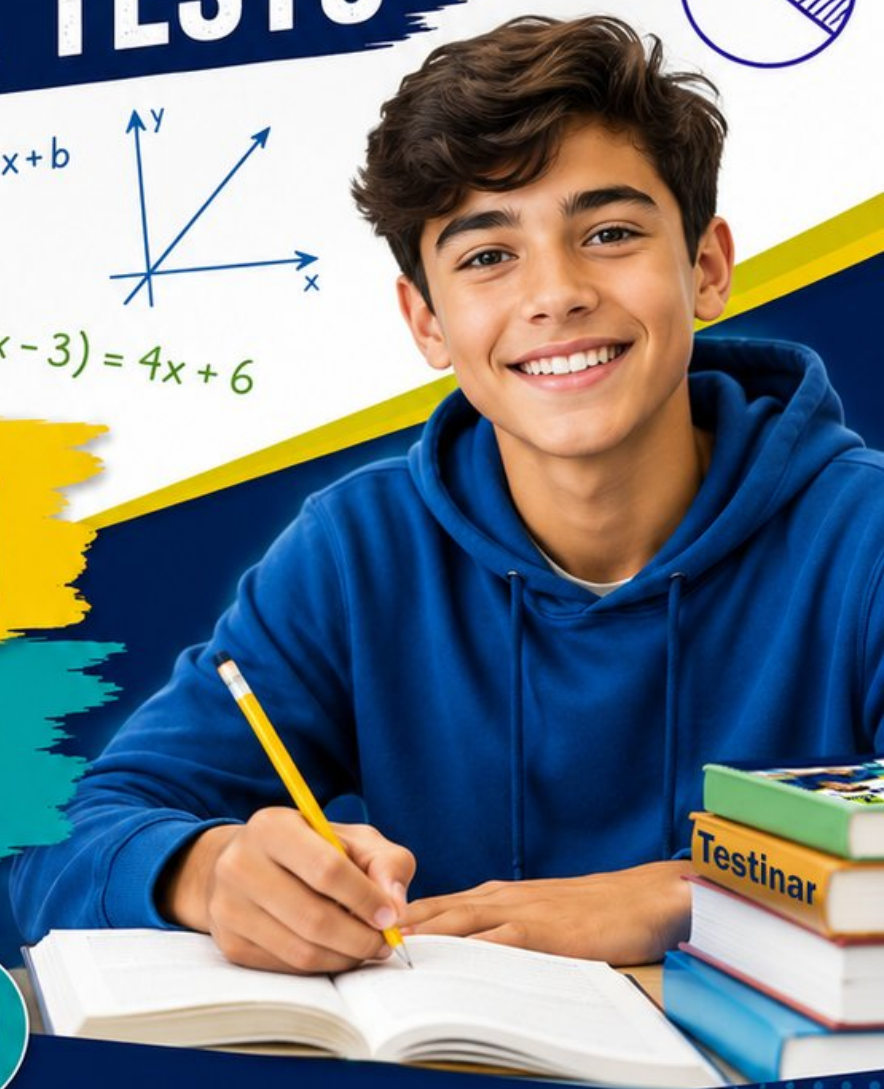
Strengthen
Math Skills



Detailed Answers
& Explanations

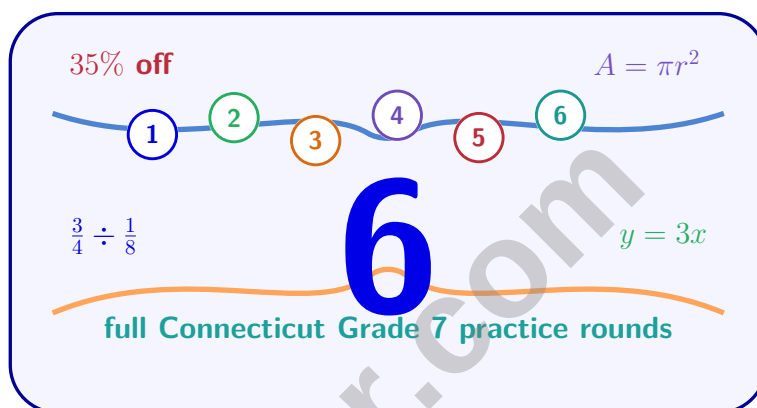


Improve Test
Performance



6 Connecticut Smarter Balanced Grade 7 Math Practice Tests

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



Six complete 40-question Grade 7 Smarter Balanced 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, Connecticut Grade 7 Problem Solver!

Six focused rounds for sharper Smarter Balanced math thinking

This book gives you six full Grade 7 Smarter Balanced 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 Connecticut 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.

Connecticut 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 Smarter Balanced 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.



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For more practice
& answers

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1) Which expression is equivalent to $-3(2x + 5)$?

☐ A. $-6x - 15$

☐ C. $6x - 15$

☐ B. $-6x + 15$

☐ D. $-6x + 5$

2) Solve for x : $9(x + 2) = 63$

☐ A. $x = 3$

☐ C. $x = 7$

☐ B. $x = 5$

☐ D. $x = 9$

3) A clothing factory reduces its fabric waste from 500 kg to 375 kg per week through efficiency improvements. What is the percent decrease in waste?

☐ A. 75%

☐ C. 45%

☐ B. 33.3%

☐ D. 25%

4) How many distinct triangles can be drawn with side lengths 5 cm, 7 cm, and 12 cm?

☐ A. 0

☐ C. 2

☐ B. 1

☐ D. Infinitely many

5) A hotel posts a survey in guest rooms asking: "Didn't you love your stay with us?" Which is the PRIMARY bias in the survey question itself?

☐ A. The question uses leading language suggesting a desired answer

☐ C. The survey is only given to guests

☐ D. The question is too vague

☐ B. The sample size is too small

6) A triangle has vertices at $A(1, 0)$, $B(3, 0)$, and $C(2, 2)$. If the triangle is reflected over the x -axis, what are the new coordinates of vertex C ?

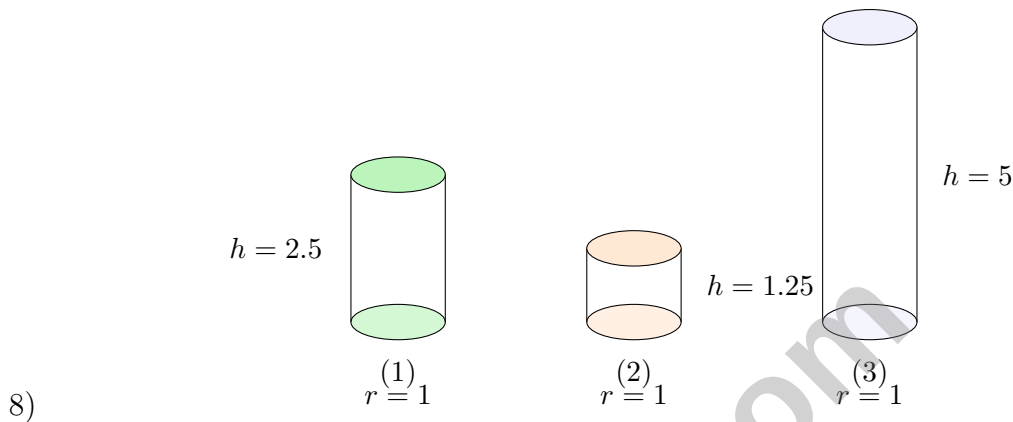


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7) A fair coin is flipped. What is the theoretical probability of getting heads?

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

- ☐ C. $\frac{1}{2}$
☐ 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)
☐ B. (2), (1), (3)

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

9) Two datasets have the same mean of 50. Dataset X has an IQR of 10. Dataset Y has an IQR of 25. What does this imply?

- ☐ A. Dataset X is more spread out
☐ B. Dataset Y is more spread out in the middle 50%

- ☐ C. Both are identical except for outliers
☐ D. Dataset Y has a smaller range



- 10) A line graph shows the growth of a plant over 8 weeks (height in cm): Week 1: 5, Week 2: 7, Week 3: 9, Week 4: 11, Week 5: 12, Week 6: 13, Week 7: 14, Week 8: 14.5. Based on this trend, which prediction is most reasonable for Week 9?

☐ A. 15 cm ☐ C. 10 cm
☐ B. 14 cm ☐ D. 20 cm

- 11) A bike shop offers frames in 2 sizes (Small, Large) and 4 colors (Black, White, Red, Green). A customer mistakenly counts the colors first as 4, then multiplies by only 1 size instead of 2. What error did the customer make, and what is the correct answer?

☐ A. The error is using addition; correct: 8 ☐ C. The error is confusing size and color; correct: 6
☐ B. The error is forgetting one size; correct: 8 ☐ D. The error is not using the counting principle; correct: 4

- 12) A marble bag contains 5 green, 3 purple, and 2 orange marbles. If drawing without replacement, which compound event is MOST likely?

☐ A. Green then purple ☐ C. Purple then purple
☐ B. Orange then green ☐ D. Green then green

- 13) A six-sided die was rolled 120 times. The results are shown below.

Face	1	2	3	4	5	6
Frequency	18	22	19	21	25	15

What is the experimental probability of rolling a 5?

☐ A. $\frac{25}{120}$ ☐ C. $\frac{1}{6}$
☐ B. $\frac{7}{24}$ ☐ D. $\frac{15}{120}$



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- 1) A student earns \$15 per hour working part-time. After working 30 hours, they earn \$450. The student's employer withholds 20% for taxes. What is the net pay?
- ☐ A. \$300 ☐ C. \$360
☐ B. \$330 ☐ D. \$390
- 2) A student designs a simulation using a spinner with 10 equal sections to estimate the probability of an event. After 1000 spins, one section appears 98 times. How does this estimated probability compare to the theoretical probability of $\frac{1}{10} = 0.1$?
- ☐ A. The estimated probability is 0.098, slightly lower than theoretical ☐ C. The estimated probability is 0.102, slightly higher than theoretical
☐ B. The estimated probability is 0.098, which matches theoretical exactly ☐ D. The difference is too large to compare meaningfully
- 3) A die is rolled and a spinner with sections Red, Green, Blue is spun. What is the probability of rolling an even number and landing on Red?
- ☐ A. $\frac{1}{6}$ ☐ C. $\frac{1}{4}$
☐ B. $\frac{1}{9}$ ☐ D. $\frac{1}{3}$
- 4) 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. $\frac{1}{6}$ ☐ C. $\frac{1}{7}$
☐ B. $\frac{1}{12}$ ☐ D. $\frac{1}{2}$
- 5) A charity conducted a phone survey calling 500 households. 340 people answered and agreed to participate. Based on this experimental data, what is the probability that a randomly called household will answer and agree?
- ☐ A. $\frac{340}{500}$ ☐ C. 0.32
☐ B. $\frac{17}{50}$ ☐ D. $\frac{160}{500}$



- 6) A dataset represented in a stem-and-leaf plot has 15 values ranging from 42 to 88. If the data is split into a lower half and upper half to find quartiles, how many values are in the lower half?

- 7) Item Cost Estimates

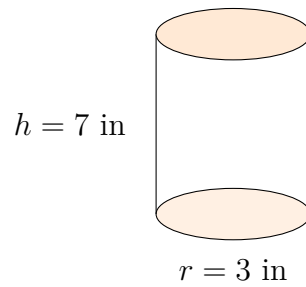
Item	Estimated Cost	Actual Cost
Shirt	\$22	\$20

What is the percent error for the shirt cost estimate?

- ☐ A. 91% ☐ C. 11%
☐ B. 9.1% ☐ D. 10%
- 8) Expand and simplify: $-1(x + 5) + 2x$
- ☐ A. $x - 5$ ☐ C. $x + 5$
☐ B. $-x - 5$ ☐ D. $3x - 5$
- 9) If you double the principal but keep the rate and time the same, by how much does the simple interest increase?
- ☐ A. The interest stays the same ☐ C. The interest is cut in half
☐ B. The interest triples ☐ D. The interest doubles
- 10) What is $-7 - (-7)$?
- ☐ A. -14 ☐ C. 14
☐ B. 7 ☐ D. 0



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1)

Which formula gives the volume of the cylinder shown?

☐ A. $\pi \times 3 \times 7$

☐ C. $2\pi \times 3 \times 7$

☐ B. $\pi \times 3^2 \times 7$

☐ D. $2\pi \times 3^2 \times 7$

- 2) A rectangular blueprint shows a hallway that is 2.5 inches by 8 inches at a scale of 1 in : 4 ft. Another blueprint of the same hallway shows it as 5 inches by 16 inches. What is the scale of the second blueprint?

☐ A. 1 in : 2 ft

☐ C. 1 in : 8 ft

☐ B. 1 in : 4 ft

☐ D. 2 in : 1 ft

- 3) Two triangles both have side lengths 5, 5, and 7. How many corresponding side lengths match?

- 4) A quadrilateral $ABCD$ has vertices $A(0,0)$, $B(4,0)$, $C(4,3)$, and $D(0,3)$. If the quadrilateral is translated by $(-2,1)$, which of the following is the new location of vertex C ?

☐ A. $(2,4)$

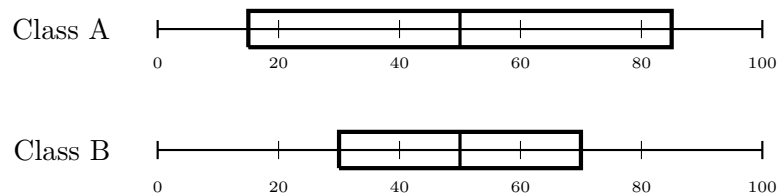
☐ C. $(6,2)$

☐ B. $(2,2)$

☐ D. $(4,3)$



5) Two box plots show test scores from two classes:



Which is most true?

- ☐ A. Class A has a wider overall range ☐ C. Both classes have identical medians
☐ B. Class B has a smaller box (IQR), shown by whiskers indicating less variability in the middle ☐ D. Class A is easier than Class B 50%
- 6) 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
- 7) A spinner is divided into 3 equal sections (Red, Blue, Yellow), and a fair coin is flipped. How many total outcomes are possible?
- ☐ A. 3 ☐ C. 6
☐ B. 5 ☐ D. 9
- 8) In a school, 30% of students play soccer and 25% play basketball. If 5% play both, what is the probability a student plays soccer OR basketball?
- ☐ A. 0.55 ☐ C. 0.40
☐ B. 0.50 ☐ D. 0.35



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Connecticut Smarter Balanced 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 Connecticut Smarter Balanced practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $-3(2x + 5) = -3(2x) + (-3)(5) = -6x - 15$.
- 2) **Choice B is correct.** (7.EE.4a) Distribute: $9x + 18 = 63$. Subtract 18: $9x = 45$. Divide by 9: $x = 5$.
- 3) **Choice D is correct.** (7.RP.3) Percent decrease = $\frac{500-375}{500} \times 100\% = \frac{125}{500} \times 100\% = 25\%$.
- 4) **Choice A is correct.** (7.G.1-7.G.5) By the Triangle Inequality, $5 + 7 = 12$. Since the sum of two sides must be STRICTLY greater than the third, no triangle exists.
- 5) **Choice A is correct.** (7.SP.1-7.SP.4) The phrase “Didn’t you love?” is leading language that biases respondents toward agreeing. This loaded wording introduces response bias in the survey question itself.
- 6) **The correct answer is (2, -2).** (7.G.1-7.G.5) Reflection over the x -axis uses the rule $(x, y) \rightarrow (x, -y)$. Applying this to $C(2, 2)$: $C' = (2, -2)$.
- 7) **Choice C is correct.** (7.SP.5-7.SP.8) A fair coin has two equally likely outcomes: heads and tails. $P(\text{heads}) = \frac{1}{2}$.
- 8) **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).
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) IQR (Interquartile Range) measures the middle 50% of data. Dataset Y’s IQR of 25 is larger than Dataset X’s IQR of 10, showing greater spread in the middle half.
- 10) **Choice A is correct.** (7.SP.1-7.SP.4) The plant grows about 2 cm/week initially, then slows to 0.5 cm/week. Continuing the slowing trend suggests growth of 0.5 cm more, giving $14.5 + 0.5 = 15 \text{ cm}$.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) Sizes: 2; colors: 4. Correct total: $2 \times 4 = 8$. The customer forgot to count one size, dividing by 2 instead.
- 12) **Choice D is correct.** (7.SP.5-7.SP.8) $P(\text{GG}) = \frac{5}{10} \cdot \frac{4}{9} = \frac{20}{90}$. $P(\text{GP}) = \frac{5}{10} \cdot \frac{3}{9} = \frac{15}{90}$. $P(\text{OG}) = \frac{2}{10} \cdot \frac{5}{9} = \frac{10}{90}$. $P(\text{PP}) = \frac{3}{10} \cdot \frac{2}{9} = \frac{6}{90}$. Green-green is largest.
- 13) **Choice A is correct.** (7.SP.6) The face 5 appeared 25 times out of 120 total rolls. Experimental probability = $\frac{25}{120}$. Note: this is slightly higher than the theoretical probability of $\frac{1}{6}$.
- 14) **Choice A is correct.** (7.SP.1-7.SP.4) Data 51, 54, 58, 61, 64, 68, 71, 75 maps: Stem 5: 1, 4, 8; Stem 6: 1, 4, 8; Stem 7: 1, 5. Answer A is correct.
- 15) **Choice A is correct.** (7.SP.5-7.SP.8) An event and its complement sum to 1. Here, $\frac{2}{3} + \frac{1}{3} = \frac{3}{3} = 1$, so both probabilities are correct.
- 16) **Choice B is correct.** (7.SP.1-7.SP.4) Sample proportion: 60% or 0.60. Apply to population: $0.60 \times 10000 = 6000$ customers.
- 17) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|240-200|}{200} \times 100\% = \frac{40}{200} \times 100\% = 20\%$.
- 18) **The correct answer is A, C.** (7.G.1-7.G.5) A: Two triangles with the same three side lengths are congruent by SSS. C: Two triangles with two equal sides and an equal included angle are congruent by SAS. B is incorrect because AAA determines similarity, not congruence (triangles can be different sizes). D is incorrect because two angles and two separate sides (not necessarily properly positioned) do not guarantee congruence.
- 19) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute 5 to both terms: $(3x) \cdot 5 + 2 \cdot 5 = 15x + 10$. The coefficient position on the right does not change the distributive property: $(b + c)a = ba + ca$.
- 20) **Choice D is correct.** (7.RP.3) Simple interest formula $I = Prt$ depends only on principal, rate, and time—not on external factors like bank location.
- 21) **The correct answer is 7.** (7.G.1-7.G.5) Scale factor = $\frac{14}{10} = 1.4$. Height = $5 \times 1.4 = 7 \text{ ft}$.
- 22) **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.
- 23) **Choice D is correct.** (7.RP.3) The increase is 25% of $\$60 = \15 . New price: $60 + 15 = 75$ dollars.
- 24) **Choice C is correct.** (7.NS.1b) Starting at -2 and jumping right to 6 means moving right by 8 units (from -2 to 0 is 2, then 0 to 6 is 6, total $2 + 6 = 8$). So $-2 + 8 = 6$.
- 25) **Choice D is correct.** (7.EE.1) $3x^2$ has exponent 2, while $3x$ has exponent 1. They are not like terms.



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!

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- ✓ 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!

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