

6 IOWA ISASP

GRADE

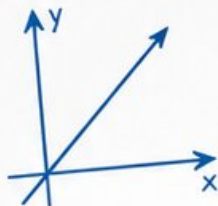
7

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



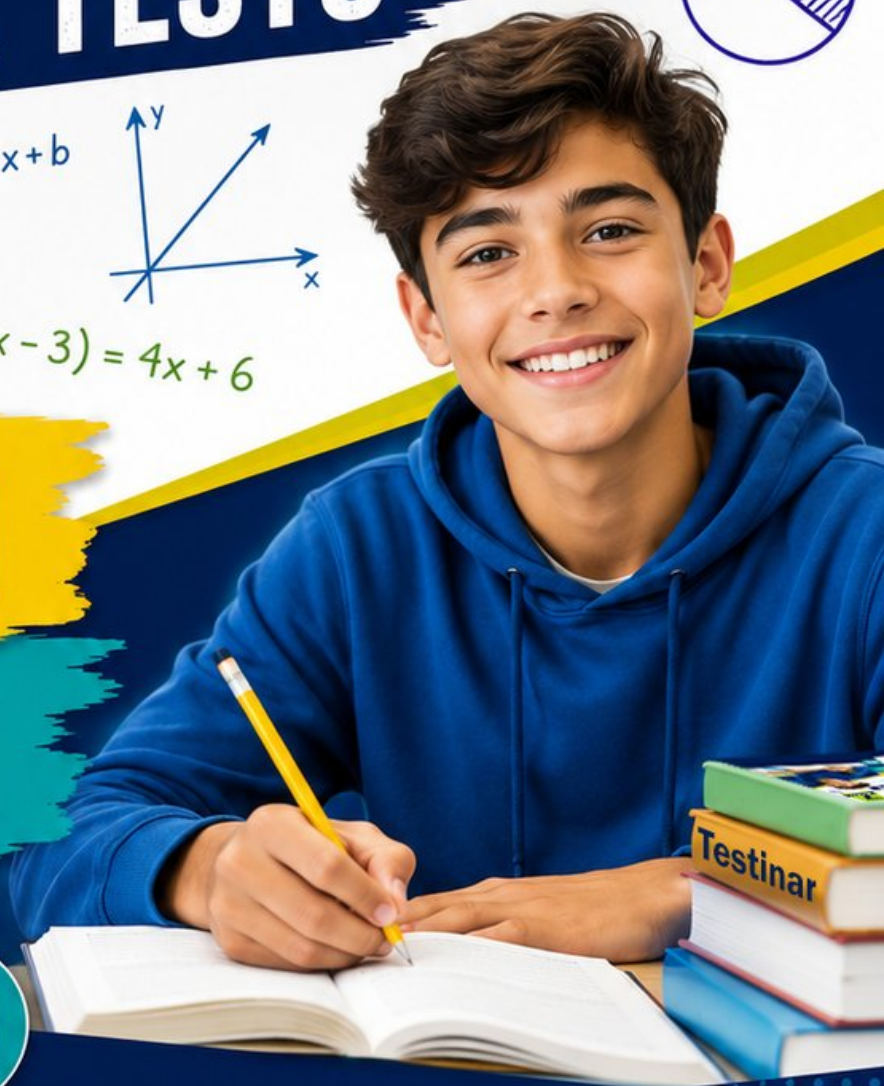
Strengthen
Math Skills



Detailed Answers
& Explanations

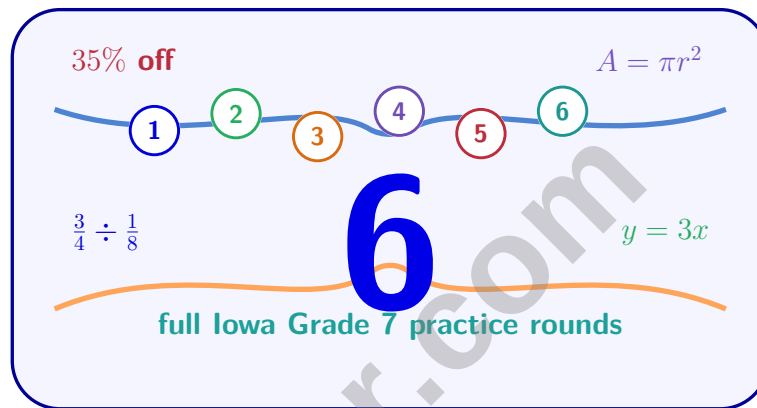


Improve Test
Performance



6 Iowa ISASP Grade 7 Math Practice Tests

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



Six complete 40-question Grade 7 ISASP 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, Iowa Grade 7 Problem Solver!

Six focused rounds for sharper ISASP math thinking

This book gives you six full Grade 7 ISASP 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 Iowa 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.

Iowa 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 ISASP 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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1) A student claims: "Since I got a 6 on the first die roll, the next roll CANNOT be another 6 because that's too unlikely." This reasoning contains which error?

- ☐ A. Misunderstanding mutually exclusive events
- ☐ B. Confusing probability with certainty
- ☐ C. Believing past outcomes influence independent future events
- ☐ D. Incorrectly simplifying fractions

2) Two similar triangles have areas in the ratio 4 : 9. If the smaller triangle has a base of 8 cm, what is the base of the larger triangle?



3) A tile setter lays $\frac{5}{8}$ of a floor in $\frac{1}{2}$ hour. How many floors can be laid in 1 hour?

- ☐ A. $\frac{5}{16}$ floor
- ☐ B. 2 floors
- ☐ C. $\frac{4}{5}$ floor
- ☐ D. $\frac{5}{4}$ floors

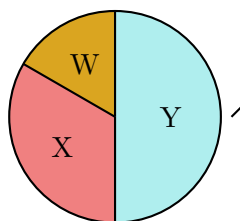
4) Which solution strategy is correct for $4x + 6 = 30$?

- ☐ A. Subtract 6, then divide by 4
- ☐ B. Divide by 4, then subtract 6
- ☐ C. Multiply by 4, then add 6
- ☐ D. Add 6, then divide by 4

5) A sports equipment company surveys 500 customers about their new racket design. The company wants to ensure the sample represents both amateur and professional players. Which sampling method best achieves this?

- ☐ A. Random selection of all customers
- ☐ B. Stratified sampling with separate groups for amateurs and professionals
- ☐ C. Selecting every 10th customer from an online list
- ☐ D. Asking volunteers at a professional tennis tournament





6)

The spinner above has 3 sections. Section W is $\frac{1}{6}$ of the circle, section X is $\frac{1}{3}$ of the circle, and section Y is the remaining part. If the spinner is spun 60 times, approximately how many times would you expect to land on section Y?

- ☐ A. 10 times ☐ C. 30 times
☐ B. 20 times ☐ D. 40 times

7) A plant scientist measures the heights (in cm) of two plant varieties after 6 weeks:

Variety	Mean	Median	IQR
Fast-Grow	32	31	8
Steady-Grow	31	32	3

Which statement best describes the distributions?

- ☐ A. Fast-Grow is taller and more consistent ☐ C. Both varieties are identical
☐ B. Steady-Grow has low outliers; Fast-Grow has consistent growth ☐ D. Steady-Grow is more consistent; Fast-Grow skewed high

8) A double-bar graph compares the number of books read by boys and girls in two grade levels: Grade 6 boys 24, Grade 6 girls 32; Grade 7 boys 28, Grade 7 girls 35. Which statement is BEST supported by this display?

- ☐ A. Girls always read more books than boys ☐ C. Grade 7 students read the most books overall
☐ B. In both grades, girls tend to read more books than boys in the same grade ☐ D. Boys read fewer books because they prefer other activities



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- 9) A spinner has 10 equally-sized sections. 4 are labeled “Red”, 3 are labeled “Blue”, and 3 are labeled “Yellow”. What is the probability of spinning Blue?

☐ A. $\frac{3}{10}$
☐ B. $\frac{1}{3}$

☐ C. $\frac{4}{10}$
☐ D. $\frac{3}{7}$

- 10) Two letters are selected from {P, Q, R, S} with replacement. How many outcomes are in the sample space?

☐ A. 4
☐ B. 8

☐ C. 12
☐ D. 16

- 11) A spinner with 4 equal sections was spun 360 times. The results are displayed in a frequency table:

Section	Red	Blue	Green	Yellow
Frequency	95	88	92	85

How does the experimental probability of landing on red compare to the theoretical probability of $\frac{1}{4}$?

☐ A. Experimental is higher
☐ B. Experimental is lower

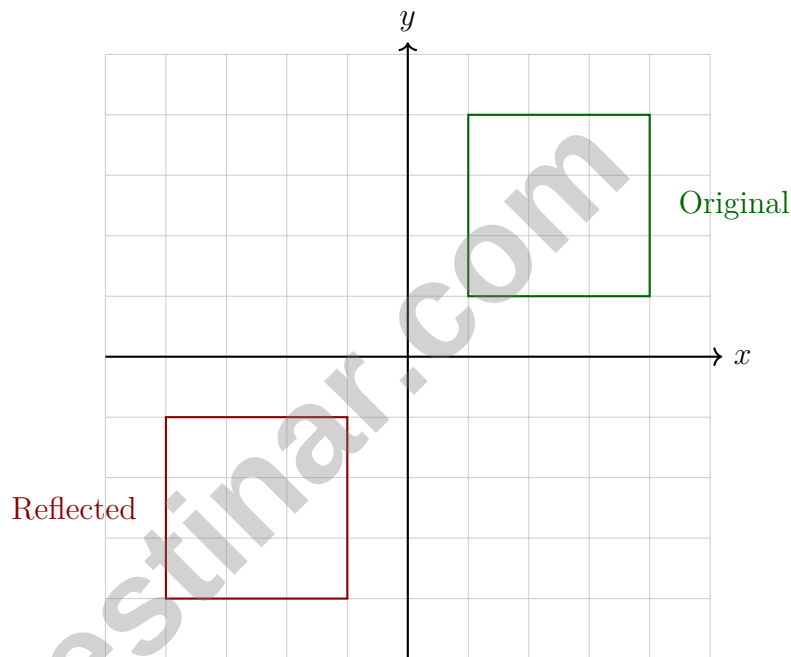
☐ C. Both are exactly equal
☐ D. Cannot compare without more data

- 12) A circular clock face has circumference 88 cm. Using $\pi \approx \frac{22}{7}$, what is the radius of the clock?



1) A student rewrites $5(2x - 3)$ as $10x - 15$ and then as $10x - 3 - 5 + 3$. What error does the second step show?

- ☐ A. Distributing only the 5 to the $2x$ but not to the -3
☐ C. Adding unnecessary terms that don't equal the original
- ☐ B. Forgetting to multiply both terms inside the parentheses
- ☐ D. Not combining like terms at the end



2)

The dark green square is transformed to the dark red square. Which line of reflection was used?

- ☐ A. The line $y = x$
☐ C. The x -axis
- ☐ B. The line $y = -x$
☐ D. The y -axis



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3) An investment grew from \$1 000 to \$1 210. What is the percent increase?

☐ A. 17.4%

☐ C. 21%

☐ B. 18.2%

☐ D. 121%

4) A letter is randomly selected from the word CAT, and a coin is flipped. Which table correctly represents the sample space?

	H	T
C	CH	CT
A	AH	AT
T	TH	TT

☐ A. 3 outcomes

☐ C. 5 outcomes

☐ B. 4 outcomes

☐ D. 6 outcomes

5) A number from 1 to 20 is selected at random. What is the probability of selecting a multiple of 3 OR a multiple of 5?

☐ A. $\frac{6}{20}$

☐ C. $\frac{8}{20}$

☐ B. $\frac{9}{20}$

☐ D. $\frac{10}{20}$

6) A coach estimated a player could jump 2.4 meters, but the player jumped 2 meters. What is the percent error?

☐ A. 80%

☐ C. 23.5%

☐ B. 16.7%

☐ D. 20%

7) Expand: $0.5(8x + 4)$

☐ A. $0.5x + 2$

☐ C. $8x + 2$

☐ B. $4x + 2$

☐ D. $4x + 4$



1) Without dividing, which fraction will **NOT** produce a terminating decimal?

☐ A. $\frac{9}{32}$
☐ B. $\frac{5}{64}$

☐ C. $\frac{7}{30}$
☐ D. $\frac{11}{80}$

2) What is the solution to $\frac{x-3}{2} = 5$?

☐ A. $x = 7$

☐ C. $x = 13$

☐ B. $x = 10$

☐ D. $x = 16$

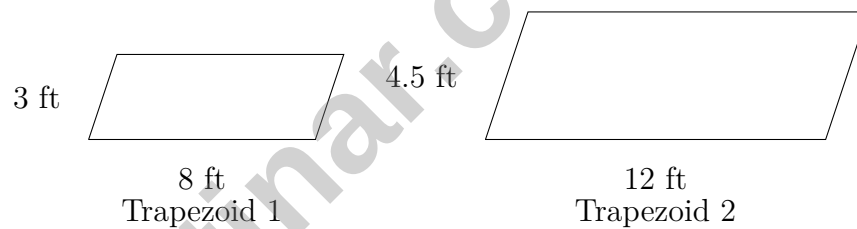
3) A triangular prism with an equilateral triangular base (side 5 cm) and height 10 cm is sliced parallel to its triangular base. What is the shape of the cross-section?

☐ A. Equilateral triangle

☐ C. Trapezoid

☐ B. Rectangle

☐ D. Irregular pentagon



4)

These similar trapezoids have heights of 3 ft and 4.5 ft. If Trapezoid 1 has a base of 8 ft, what is the base of Trapezoid 2?

☐ A. 10 ft

☐ C. 12 ft

☐ B. 11 ft

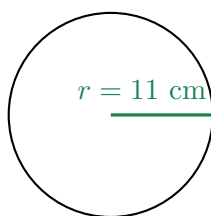
☐ D. 14 ft



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- 5) A round table has radius 1.5 feet. Approximately, what is the distance around it?
Use $\pi \approx 3.14$.

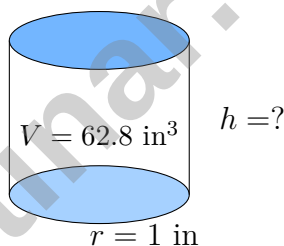
- ☐ A. 4.71 ft ☐ C. 14.13 ft
☐ B. 9.42 ft ☐ D. 7.07 ft



6)

What is the area? Use $\pi \approx 3.14$.

- ☐ A. 69.08 cm² ☐ C. 379.94 cm²
☐ B. 121 cm² ☐ D. 759.88 cm²



7)

What is the height of the cylinder if the volume is 62.8 in³ and the radius is 1 inch?
Use $\pi \approx 3.14$.

- ☐ A. 10 inches ☐ C. 20 inches
☐ B. 15 inches ☐ D. 30 inches



Iowa ISASP 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 Iowa ISASP practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.SP.5-7.SP.8) The student thinks the first roll affects the second, but die rolls are independent. Each roll has $P(6) = \frac{1}{6}$ regardless of previous results.
- 2) **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.
- 3) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate $= \frac{5/8}{1/2} = \frac{5}{8} \times 2 = \frac{10}{8} = \frac{5}{4}$ floors per hour.
- 4) **Choice A is correct.** (7.EE.3-7.EE.4) Order of operations in reverse: undo the addition/subtraction first (-6), then undo multiplication/division ($\div 4$).
- 5) **Choice B is correct.** (7.SP.1-7.SP.4) Stratified sampling ensures both groups are represented in the sample, maintaining proportion and representativeness.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) W: $\frac{1}{6}$, X: $\frac{1}{3} = \frac{2}{6}$, Y: $1 - \frac{1}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$. Expected frequency: $\frac{1}{2} \times 60 = 30$.
- 7) **Choice D is correct.** (7.SP.1-7.SP.4) Steady-Grow: mean (31) < median (32), indicating low outliers; IQR = 3 shows tight clustering. Fast-Grow: mean (32) > median (31), meaning some plants grew much taller than the typical height, pulling the mean up (right skew); IQR = 8 shows much wider spread. Steady-Grow is more consistent overall.
- 8) **Choice B is correct.** (7.SP.1-7.SP.4) The double-bar graph shows a pattern: within Grade 6 ($32 > 24$) and within Grade 7 ($35 > 28$), girls' bars are consistently taller. This supports a comparison, not causation or universals.
- 9) **Choice A is correct.** (7.SP.5-7.SP.8) Blue sections: 3 out of 10. $P(\text{Blue}) = \frac{3}{10}$.
- 10) **Choice D is correct.** (7.SP.5-7.SP.8) First letter: 4 choices; second letter: 4 choices. Total: $4 \times 4 = 16$ outcomes.
- 11) **Choice A is correct.** (7.SP.6) Experimental probability of red (relative frequency): $\frac{95}{360} \approx 0.264$. Theoretical (equal sections): $\frac{1}{4} = 0.25$. Random variation caused experimental to exceed theoretical.
- 12) **The correct answer is 14.** (7.G.4-7.G.6) $C = 2\pi r \Rightarrow 88 = 2 \times \frac{22}{7} \times r \Rightarrow 88 = \frac{44}{7}r \Rightarrow r = 88 \times \frac{7}{44} = 14$ cm.
- 13) **Choice A is correct.** (7.SP.1-7.SP.4) For $n = 20$ (even), median is between positions $n/2 = 10$ and $n/2 + 1 = 11$.
- 14) **Choice B is correct.** (7.SP.5-7.SP.8) $0.4 = \frac{4}{10} = \frac{2}{5}$ (simplified form).
- 15) **Choice D is correct.** (7.RP.3) Percent error $= \frac{|28-32|}{32} \times 100\% = \frac{4}{32} \times 100\% = 12.5\%$.
- 16) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute 2 to all three terms: $2(x) + 2(3) + 2(4) = 2x + 6 + 8 = 2x + 14$.
- 17) **Choice D is correct.** (7.RP.3) With simple interest, interest is calculated from the original principal, so the interest earned each year stays constant. Year 1: $\$80 = \$2000 \times r \times 1 \Rightarrow r = 0.04 = 4\%$.
- 18) **Choice D is correct.** (7.RP.1-7.RP.3) Divide actual by scale ratio: $30 \text{ m} \div 3 \text{ m per cm} = 10 \text{ cm}$.
- 19) **Choice C is correct.** (7.NS.1b) Model descent as $800 + (-950) = -150$. The negative result means 150 feet below ground level.
- 20) **The correct answer is A,B.** (7.G.1-7.G.5) Correct answers: (A) $(1, 0) \rightarrow (1 + 2, 0 + 3) = (3, 3) \rightarrow (-3, 3)$. (B) $(0, 0) \rightarrow (2, 3) \rightarrow (-2, 3)$. Both steps verified. Distractors: (C) True but not a unique property of this transformation (all rigid transformations preserve congruence). (D) False—rigid transformations do not change size.
- 21) **Choice D is correct.** (7.NS.1-7.NS.3) $-8 - (-2) = -8 + 2 = -6$. Subtracting the negative shifts right by 2 on the number line.
- 22) **Choice D is correct.** (7.RP.3) The tax is 8% of \$120: $0.08 \times 120 = 9.60$ dollars.
- 23) **Choice B is correct.** (7.EE.1) Unlike terms have different variables. b and c are different variables, so $3b$ and $5c$ are unlike.
- 24) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $-3(2x + 5) = -3(2x) + (-3)(5) = -6x - 15$.
- 25) **Choice B is correct.** (7.EE.4b) Set up: $47 + t \geq 200$. Subtract 47: $t \geq 153$. At least 153 more tickets are needed.
- 26) **Choice C is correct.** (7.SP.1-7.SP.4) Angle $\div 360^\circ \times 100 = 72^\circ \div 360^\circ \times 100 = 20\%$.
- 27) **The correct answer is 10.** (7.G.4-7.G.6) From $A = \pi r^2$: $314 = 3.14 \times r^2 \Rightarrow r^2 = 100 \Rightarrow r = 10$ m.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) Proportion: $\frac{3}{2} = \frac{9}{f}$. Cross multiply: $3f = 18$, so $f = 6$ cups.



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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

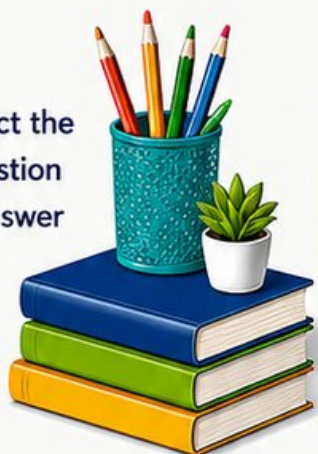
Your Persistence Coach

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!

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