

5

Kentucky KSA

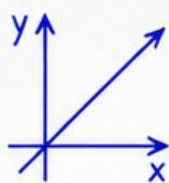
GRADE

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



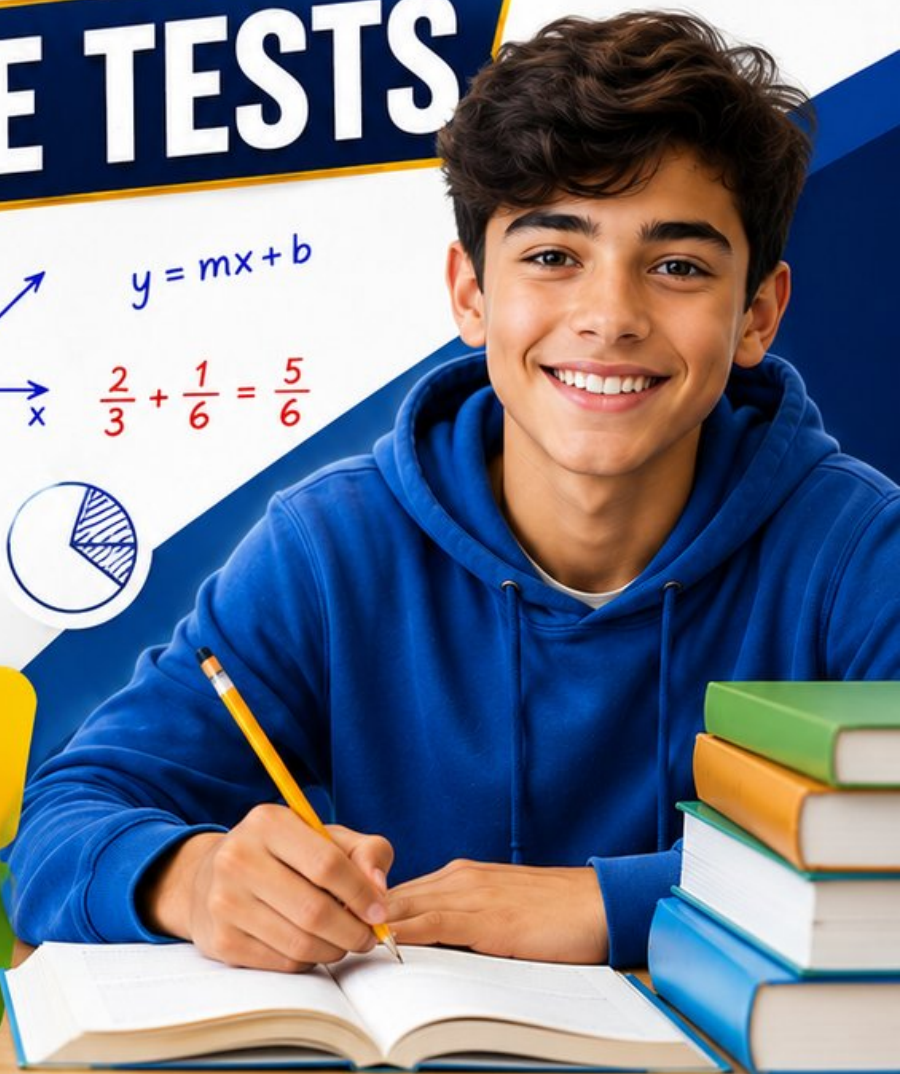
Strengthen
Math Skills



Detailed Answers
& Explanations



Improve Test
Performance



5 Kentucky KSA Grade 7 Math Practice Tests

Grade 7 Math Review with Five Tests and Clear Worked Support



Five complete 40-question Grade 7 KSA 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, Kentucky Grade 7 Problem Solver!

Five focused rounds for sharper KSA math thinking

This book gives you five full Grade 7 KSA 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 Kentucky 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.

Kentucky 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 KSA 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.

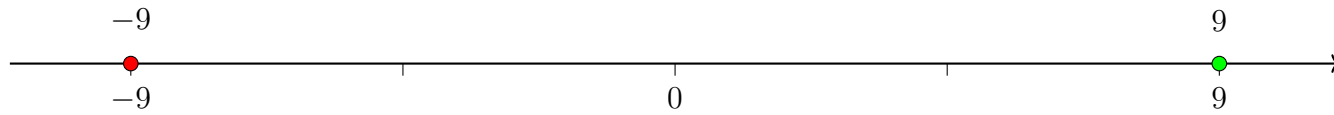


Scan me!
For more practice
& answers

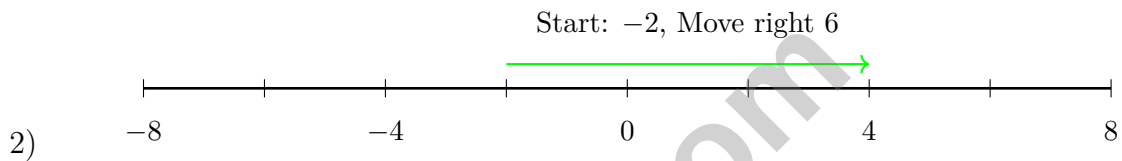
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1) What is $(-9) + 9$?



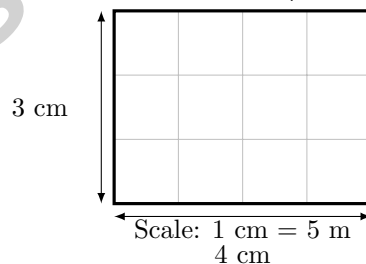
- ☐ A. 18 (adds absolute values) ☐ C. 0 (correct; additive inverse property)
☐ B. 9 (ignores the negative sign) ☐ D. -18 (keeps negative and doubles)



According to the diagram, moving right 6 units from -2 lands at 4 . Which subtraction expression is this?

- ☐ A. $-2 - 6$ ☐ C. $4 - (-2)$
☐ B. $-2 - (-6)$ ☐ D. $2 + 6$

Room Floor Plan (scale model)



3)

According to the scale, what are the actual dimensions of this rectangular room?

- ☐ A. $10 \text{ m} \times 20 \text{ m}$ ☐ C. $12 \text{ m} \times 15 \text{ m}$
☐ B. $4 \text{ m} \times 3 \text{ m}$ ☐ D. $20 \text{ m} \times 15 \text{ m}$



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& answers

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

- 5) A pair of shoes is on sale for \$45. If the original price was \$60, what is the percent discount?

☐ A. 15%☐ C. 33%☐ B. 40%☐ D. 25%

- 6) A plane descends 2000 feet from its cruising altitude of 35000 feet. What is its new altitude? (Model as -2000 for descent.)

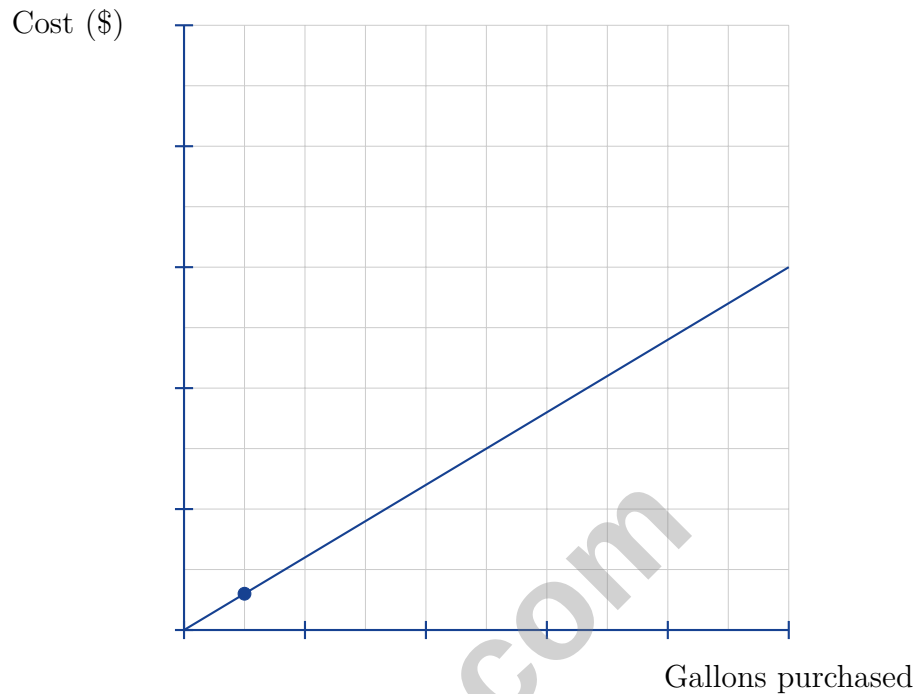
☐ A. 37000 feet☐ C. -33000 feet☐ B. 70000 feet☐ D. 33000 feet

- 7) A percent can be converted to an angle in a circle graph. What angle corresponds to 25% of a circle?

☐ A. 45° ☐ C. 90° ☐ B. 60° ☐ D. 120°

- 8) 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



9)

The graph shows the cost of gasoline purchased. What is the price per gallon?

- ☐ A. \$10.00 per gallon ☐ C. \$6.00 per gallon
☐ B. \$1.00 per gallon ☐ D. \$0.60 per gallon

10) A savings account starts with \$1,500 and grows to \$1,650 after one year. What was the interest rate?

- ☐ A. 10% ☐ C. 20%
☐ B. 15% ☐ D. 25%



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& answers

- 1) A student created a scale model where 1 inch on the model represents $\frac{1}{2}$ foot on the actual object. This is equivalent to a scale of:

☐ A. 1 in : 6 in ☐ C. 2 in : 1 ft
☐ B. 1 in : 0.5 ft ☐ D. 1 : 24

- 2) Simplify $-5x + 3x + 2y - y$, then evaluate when $x = 1$ and $y = 1$.

- 3) A quality inspector sampled 250 microchips and found 10 were faulty. The manufacturer produces 50000 chips per week. How many faulty chips are expected per week?

☐ A. 1000 ☐ C. 2000
☐ B. 1500 ☐ D. 2500

- 4) A phone plan charges \$0.10 per minute. If m is the number of minutes and c is the cost in dollars, which equation models this?

☐ A. $c = 10m$ ☐ C. $m = 0.10c$
☐ B. $c = m + 0.10$ ☐ D. $c = 0.10m$

- 5) A student calculates the surface area of a rectangular prism with dimensions 5 cm, 3 cm, and 4 cm. They compute $5 \times 3 + 5 \times 4 + 3 \times 4 = 47 \text{ cm}^2$ and forget to multiply by 2. What error did they make?

☐ A. They calculated only one pair of faces instead of all pairs. ☐ C. They used subtraction instead of addition.
☐ B. They forgot to square each dimension. ☐ D. They included a face that doesn't exist.



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- 6) A simulation of rolling two dice uses two spinners, each with 6 equal sections numbered 1–6. If the simulation is performed 120 times, approximately how many times would you expect to see a sum of 7?

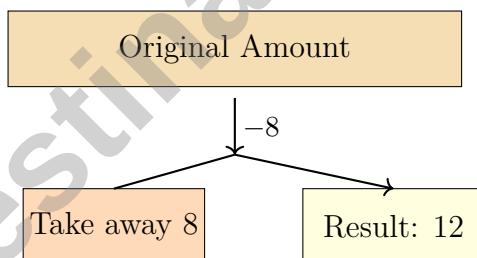
☐ A. 10 times ☐ C. 20 times
☐ B. 15 times ☐ D. 25 times

- 7) What is the greatest common factor of $16m$ and $24n$?

- 8) Solve for x : $-3(x - 2) = 15$

☐ A. $x = -3$ ☐ C. $x = 3$
☐ B. $x = -1$ ☐ D. $x = 7$

9)



Using the model, what is the original amount?

☐ A. 4 ☐ C. 20
☐ B. 12 ☐ D. 24



- 1) Three given side lengths are 4 cm, 5 cm, and 10 cm. How many distinct triangles can be formed?
- ☐ A. 0 ☐ C. 2
- ☐ B. 1 ☐ D. Infinitely many
- 2) Convert $\frac{11}{50}$ to a decimal.
- ☐ A. 0.11 ☐ C. 0.50
- ☐ B. 0.22 ☐ D. 0.55
- 3) A water tank loses $\frac{1}{8}$ of its 480 gallons per hour. How many gallons are lost in 1 hour?
- ☐ A. 48 gallons ☐ C. 80 gallons
- ☐ B. 60 gallons ☐ D. 240 gallons
- 4) The population of Earth is approximately 7.9×10^9 people. How many people is this?
- ☐ A. 79,000,000 ☐ C. 7,900,000,000
- ☐ B. 790,000,000 ☐ D. 79,000,000,000
- 5) A student writes $3^5 \cdot 3^2 = 3^{10}$ (multiplying exponents instead of adding). What error did they make?
- ☐ A. They multiplied the exponents instead of adding them. ☐ C. They ignored the product rule; the correct answer is 3^7 .
- ☐ B. They multiplied the bases instead of keeping them the same. ☐ D. They forgot to use the exponent of 1 on the base.



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& answers

6) Solve: $6x - 15 = 3$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 5$

7) Maria earns \$12 per hour. How many hours must she work to earn at least \$144?

☐ A. $h < 12$

☐ C. $h \leq 144$

☐ B. $h \geq 12$

☐ D. $h > 12$

8) A map has a scale of 2 cm : 3 km. If two towns are 10 cm apart on the map, how far apart are they in reality?

☐ A. 12 km

☐ C. 18 km

☐ B. 15 km

☐ D. 20 km

9) A student solved $\frac{p}{100} = \frac{24}{120}$ and wrote $p = 20$. Which equation should they set up instead?

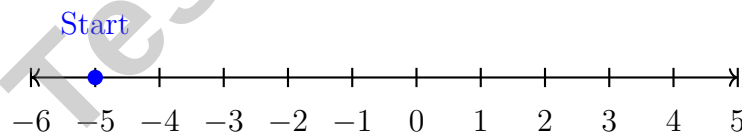
☐ A. $\frac{24}{120} = \frac{100}{p}$

☐ C. $\frac{120}{24} = \frac{p}{100}$

☐ B. $p = \frac{24}{120}$

☐ D. $\frac{24}{120} = \frac{p}{100}$

10) Use the number line. Start at -5 , add 8, then subtract 3. Where do you end?



☐ A. -16

☐ C. 6

☐ B. 0

☐ D. 10



Kentucky KSA 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 Kentucky KSA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.NS.1-7.NS.3) A number added to its opposite always equals zero. This is the additive inverse property: $a + (-a) = 0$.
- 2) **Choice B is correct.** (7.NS.1-7.NS.3) Moving right (positive direction) from -2 is the same as subtracting a negative. $-2 - (-6) = -2 + 6 = 4$.
- 3) **Choice D is correct.** (7.RP.1-7.RP.3) Using the scale $1 \text{ cm} = 5 \text{ m}$: width is $4 \times 5 = 20 \text{ m}$; height is $3 \times 5 = 15 \text{ m}$.
- 4) **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 $\frac{2}{5}$.
- 5) **Choice D is correct.** (7.RP.3) Discount is $60 - 45 = 15$. Percent: $\frac{15}{60} = \frac{1}{4} = 25\%$.
- 6) **Choice D is correct.** (7.NS.1b) New altitude = $35000 + (-2000) = 33000$ feet. The plane's altitude decreased by 2000 feet.
- 7) **Choice C is correct.** (7.SP.1-7.SP.4) 25% of $360^\circ = 0.25 \times 360^\circ = 90^\circ$.
- 8) **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.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point is $(1, 0.6)$, indicating \$0.60 per gallon.
- 10) **Choice A is correct.** (7.RP.3) Interest rate = $(\$1,650 - \$1,500) \div \$1,500 = \$150 \div \$1,500 = 0.10 = 10\%$.
- 11) **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**.
- 12) **Choice A is correct.** (7.NS.2d) Divide $7 \div 12 = 0.58333 \dots = 0.58\bar{3}$. Since $12 = 2^2 \times 3$, the 3 causes repetition.
- 13) **Choice C is correct.** (7.NS.1-7.NS.3) Loss of 7 yards is -7 ; gain of 13 is $+13$: $-7 + 13 = 6$ yards.
- 14) **The correct answer is \$48.83.** (7.RP.3) Tax = $0.085 \times 45 = \$3.825 \approx \3.83 . Final price = $45 + 3.83 = \$48.83$.
- 15) **Choice A is correct.** (7.NS.1-7.NS.3) Convert to decimals: 0.081, 0.56, 13. Ordered: $0.081 < 0.56 < 13$.
- 16) **Choice D is correct.** (7.RP.1-7.RP.3) Expected ratio: $3/1 = 3$. For sugar 4: flour should be $3 \times 4 = 12$, not 13.
- 17) **Choice C is correct.** (7.RP.3) Using the proportion $\frac{30}{100} = \frac{p}{100}$, the shaded region covers 30 out of 100 unit squares, representing 30%.
- 18) **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.
- 19) **Choice D is correct.** (7.NS.1-7.NS.3) $\frac{1}{4} - \frac{3}{4} = -\frac{2}{4} = -\frac{1}{2}$.
- 20) **Choice A is correct.** (7.NS.1-7.NS.3) Net change = $-\$2.50 + \$1.75 - \$0.85 = -\1.60 .
- 21) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{not blue}) = 1 - P(\text{blue}) = 1 - 0.3 = 0.7$.
- 22) **Choice A is correct.** (7.NS.2) The diagram shows 4 groups of 1 chip each, totaling 4 chips. This represents $4 \times 1 = 4$.
- 23) **Choice B is correct.** (7.NS.1-7.NS.3) $5^2 = 25$ and $6^2 = 36$. Since 32 is much closer to 36 than to 25, $\sqrt{32}$ is closer to 6 (approximately 5.66).
- 24) **Choice C is correct.** (7.EE.1-7.EE.2) The original simplified form is $10x - 15$. Adding $-3 - 5 + 3$ creates extra terms: $10x - 15 - 3 - 5 + 3 \neq 10x - 15$. This shows a misunderstanding of equivalent forms.
- 25) **Choice A is correct.** (7.SP.3) Median shows the center/typical value. Even if B's median (55) exceeds A's (50), overlap means some values in A exceed some in B. Median comparison shows typical difference, not individual comparisons.
- 26) **The correct answer is \$2500.** (7.RP.3) $500 = P \times 0.05 \times 4 \Rightarrow 500 = 0.2P \Rightarrow P = \2500 .
- 27) **Choice D is correct.** (7.RP.3) Commission = commission rate $\times$ sales = $0.025 \times 400000 = \$10,000$.
- 28) **Choice A is correct.** (7.G.4-7.G.6) Rectangle: $16 \times 12 = 192 \text{ yd}^2$. Triangle: $\frac{1}{2} \times 12 \times 4 = 24 \text{ yd}^2$. Remaining: $192 - 24 = 168 \text{ yd}^2$.
- 29) **Choice D is correct.** (7.RP.3) Each month increases by \$250 (Month 1: \$250, Month 2: \$500, Month 3: \$750, Month 4: \$1000).
- 30) **Choice D is correct.** (7.RP.1-7.RP.3) Original recipe: 2 cups pineapple juice. Scaling by 4: $2 \times 4 = 8$ cups.
- 31) **Choice A is correct.** (7.RP.3) After 1 year: $1500 \times 1.07 = 1605$. This equals the target amount.



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!



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