

10

Rhode Island RICAS

GRADE
7
MATH

PRACTICE TESTS

Standards Aligned Problem
Solving For Comprehensive
Assessment Programs



10 PRINTED TESTS

Realistic practice to build
confidence and mastery



2 ONLINE TESTS

Extra practice for
continued success



DETAILED ANSWER EXPLANATIONS

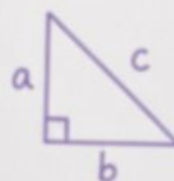
Learn with step-by-step
solutions



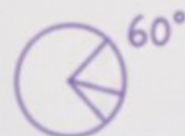
FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice

$$y = mx + b$$



$$2x - 3 = 11$$



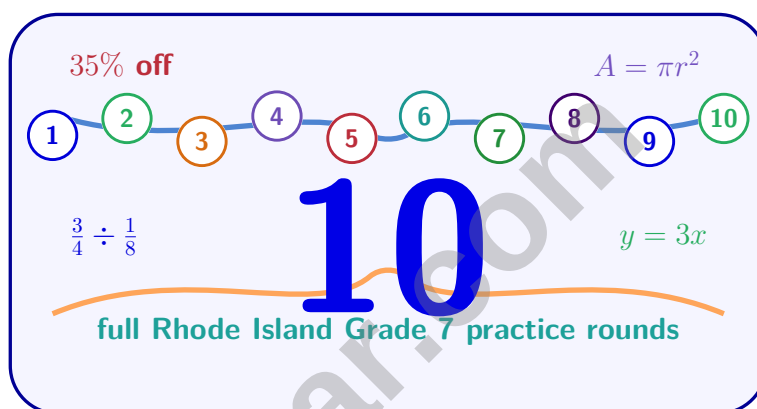
10 PRINTED TESTS
+2 ONLINE TESTS

Use these two additional online practice
tests for extra review after the printed
tests in this book.

PRACTICE ★ REVIEW ★ SUCCEED

10 Rhode Island RICAS Grade 7 Math Practice Tests

Rhode Island Grade 7 RICAS Practice for focused coastal review of ratios, percent reasoning, algebra, geometry, statistics, and chance



Ten complete 40-question Grade 7 RICAS 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, Rhode Island Grade 7 Problem Solver!

Ten focused rounds for sharper Rhode Island RICAS math thinking

This book gives you ten full Grade 7 RICAS 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 Rhode Island 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 ten-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.

Rhode Island 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?

Ten Rhode Island RICAS tests, 400 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.
Tests 7–9	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final Rhode Island round to show growth across the whole book.
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.



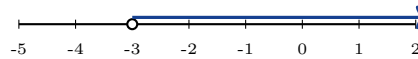
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& answers

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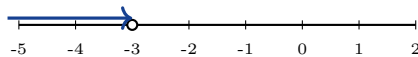
★ Practice Test 1	_____	11
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- 1) Two students solved $-3x + 2 < 11$. Student X found $x > -3$, Student Y found $x < -3$. Who graphed correctly, and why?

Student X's graph:



Student Y's graph:



- ☐ A. Student X is correct
☐ B. Student Y is correct
☐ C. Both are correct
☐ D. Neither is correct
- 2) Simplify: $(w^4)^2$
- ☐ A. w^2
☐ B. w^6
☐ C. w^8
☐ D. w^{16}
- 3) Which equation matches the description: "A number is multiplied by 5, then 12 is subtracted, and the result is 28"?
- ☐ A. $5x - 12 = 28$
☐ B. $5x + 12 = 28$
☐ C. $12 - 5x = 28$
☐ D. $\frac{x}{5} - 12 = 28$
- 4) Which expression is equivalent to $12m + 18n$?
- ☐ A. $6(2m + 3n)$
☐ B. $6(12m + 18n)$
☐ C. $2(6m + 9n)$
☐ D. $12(m + 1.5n)$
- 5) A deck of cards has 52 cards. What is the probability of drawing a face card (Jack, Queen, or King) from a standard deck?
- ☐ A. $\frac{12}{52}$
☐ B. $\frac{2}{13}$
☐ C. $\frac{4}{13}$
☐ D. $\frac{1}{4}$



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6) A coin is flipped and a die showing 1, 2, or 3 is rolled. How many favorable outcomes involve Tails and a number less than 3?

☐ A. 1☐ C. 3☐ B. 2☐ D. 4

7) A card is drawn from a standard deck. What is the probability of drawing a king OR a queen?

☐ A. $\frac{4}{52}$ ☐ C. $\frac{2}{52}$ ☐ B. $\frac{2}{13}$ ☐ D. $\frac{1}{26}$

8) A cylindrical can contains 301.44 cubic inches of soup. If the radius is 3 inches, what is the height of the can? Use $\pi \approx 3.14$.

9) A die was rolled and outcomes were tallied. The results showed odd numbers (1, 3, 5) appeared a combined 87 times out of 180 rolls. What is the experimental probability of rolling an odd number?

☐ A. 0.48☐ C. 0.52☐ B. 0.50☐ D. 0.87

10) Which event has a probability of 0 (impossible)?

☐ A. Rolling a 7 on a standard six-sided die☐ C. Drawing a number from 1 to 10☐ B. Flipping a coin and getting tails☐ D. Picking a blue marble from a bag of blue marbles

11) Given an estimate of 36 cm and an actual value of 45 cm, find the percent error.

☐ A. 9%

☐ C. 20%

☐ B. 25%

☐ D. 80%

12) A dot plot shows sit-ups completed by two classes. Class 1 values cluster at 28–32 sit-ups. Class 2 values spread from 15 to 45 sit-ups. Which class is more consistent?



13) Expand: $-4(3b + 2)$

☐ A. $-12b - 8$

☐ C. $12b - 8$

☐ B. $-12b + 8$

☐ D. $-12b + 2$

14) Sarah has two options to save money. Option 1: \$1000 at 4% simple interest for 5 years. Option 2: \$1200 at 3% simple interest for 5 years. Which produces more total money?

☐ A. Option 1

☐ C. Both are equal

☐ B. Cannot determine without more data

☐ D. Option 2

15) Simplify: $6 - (-1)$

☐ A. 7

☐ C. -5

☐ B. 5

☐ D. -7



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1) Simplify: $4m^2 + 7m + 2m^2 - 3m$

☐ A. $6m^2 + 4m$

☐ C. $11m^2 + 4m$

☐ B. $6m^3 + 4m$

☐ D. $6m^2 - m$

2) Two box plots compare the number of online orders per day for two e-commerce sites. Site X: Q1 = 50, Median = 75, Q3 = 100. Site Y: Q1 = 40, Median = 75, Q3 = 110. Which site has more consistent order volume?

☐ A. Site X (lower IQR: 50 vs. 70)

☐ C. Both sites are identical

☐ B. Site Y (higher Q3 means more orders)

☐ D. Site Y (lower Q1 means better baseline)

3) A savings goal is \$1,200 for a laptop. If someone saves \$40 per month, how many months will it take to reach the goal?

4) The stem-and-leaf plot shows daily sales:

Stem	Leaves
1	4, 7
2	2, 5, 8
3	1, 5, 6, 9

How many days did sales fall below 25?

☐ A. 3

☐ C. 5

☐ B. 4

☐ D. 6


5) A garden is shaped like an L. It consists of a 6 m by 4 m rectangle and a 3 m by 3 m square connected at a corner. Find the total area of the garden.

☐ A. 12 m^2

☐ B. 21 m^2

☐ C. 33 m^2

☐ D. 45 m^2

6) A triangular prism container is filled with water. The triangular base has legs 8 cm and 6 cm. If the container is 15 cm deep, what is the volume of water it can hold?

☐ A. 120 cm^3

☐ B. 240 cm^3

☐ C. 360 cm^3

☐ D. 720 cm^3

7) Factor: $4c - 12d$

☐ A. $4(c - 3d)$

☐ B. $2(2c - 6d)$

☐ C. $12(c - d)$

☐ D. $c(4 - 12d)$

8) Add: $-12 + 7 + (-5)$. Show your work.

9) A rectangular prism has base dimensions $9 \text{ cm} \times 7 \text{ cm}$ and height 2 cm. A student forgets to include one of the two side faces with dimensions $9 \times 2 \text{ cm}$. If the correct surface area is SA_{correct} , what percentage of the correct surface area is their incorrect answer?

☐ A. 25%

☐ B. 50%

☐ C. 75%

☐ D. 91%



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- 1) Marcus walks 12 meters east. To return to his starting point, he must walk 12 meters west. Which number represents his westward walk?
- ☐ A. -12 (opposite direction) ☐ C. 0 (no displacement)
- ☐ B. 12 (same direction as eastward walk) ☐ D. -24 (double the distance in opposite direction)
- 2) A hospital tracks patient visit types. If emergency visits occupy 216° of a circle graph, what percent do they represent?
- ☐ A. 36% ☐ C. 60%
- ☐ B. 54% ☐ D. 72%
- 3) A school is trying to estimate the average number of pets owned per household in its attendance area. Which approach would give the most representative sample?
- ☐ A. Survey the 50 families with the largest houses ☐ C. Randomly select a sample from a list of all households
- ☐ B. Ask volunteers from the PTA to participate ☐ D. Survey families who shop at the local pet store
- 4) Simplify: $\frac{4y^9}{2y^4}$
- ☐ A. $2y^5$ ☐ C. $2y^{36}$
- ☐ B. $2y^{13}$ ☐ D. $4y^5$
- 5) A music lesson instructor charges a \$30 booking fee and \$35 per hour. If the total is \$135, which equation finds h , the number of hours?
- ☐ A. $30h + 35 = 135$ ☐ C. $35 + 30h = 135$
- ☐ B. $35h + 30 = 135$ ☐ D. $30(h + 35) = 135$



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6) Find x : $5(x - 1) = 20$

☐ A. $x = 2$

☐ C. $x = 5$

☐ B. $x = 4$

☐ D. $x = 8$

7) Solve for x : $-4(x - 5) = 4$

☐ A. $x = 3$

☐ C. $x = 5$

☐ B. $x = 4$

☐ D. $x = 6$

8) Solve: $\frac{2x}{5} = 8$

☐ A. $x = 16$

☐ C. $x = 24$

☐ B. $x = 20$

☐ D. $x = 32$

9) Which scale would make the drawing *larger* than the actual object?

☐ A. 1 in : 10 ft

☐ C. 2 in : 1 ft

☐ B. 1 in : 5 ft

☐ D. 1 in : 100 ft

10) A map shows a rectangular park with scale 1 in : 500 ft. An error causes the scale to be doubled (widening the drawing). If the park measures 6 inches by 8 inches on the original map, what are the dimensions on the incorrectly scaled map?

☐ A. 3 in by 4 in

☐ C. 12 in by 16 in

☐ B. 6 in by 8 in

☐ D. 24 in by 32 in

11) Which of the following statements is true about cross-sections of a cube?

☐ A. All cross-sections are squares

☐ C. Cross-sections are always congruent to the cube's faces

☐ B. A cross-section can be a triangle, rectangle, or hexagon

☐ D. No cross-section can have more than 4 sides



Rhode Island RICAS 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 Rhode Island RICAS practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.EE.4b) Solving: $-3x + 2 < 11 \Rightarrow -3x < 9 \Rightarrow x > -3$ (flip inequality when dividing by negative). Student X correctly shows an open circle at -3 with a right arrow.
- 2) **Choice C is correct.** (7.EE.1-7.EE.2) Power rule: $(w^4)^2 = w^{4 \times 2} = w^8$.
- 3) **Choice A is correct.** (7.EE.3-7.EE.4) Multiply by 5, then subtract 12: $5x - 12 = 28$. This is the correct translation.
- 4) **Choice A is correct.** (7.EE.1-7.EE.2) $\gcd(12, 18) = 6$, so $12m + 18n = 6(2m + 3n)$.
- 5) **Choice A is correct.** (7.SP.5-7.SP.8) Face cards: 12 (4 suits $\times$ 3 types). $P(\text{face card}) = \frac{12}{52} = \frac{3}{13}$.
- 6) **Choice B is correct.** (7.SP.5-7.SP.8) Tails: 1 outcome. Numbers less than 3 from $\{1, 2, 3\}$: $\{1, 2\} = 2$ outcomes. Favorable: T1, T2 = 2 outcomes.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) King OR Queen: $P(\text{King}) + P(\text{Queen}) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$ (mutually exclusive).
- 8) **The correct answer is 10.67.** (7.G.4-7.G.6) $V = \pi r^2 h \Rightarrow 301.44 = 3.14 \times 9 \times h \Rightarrow 301.44 = 28.26h \Rightarrow h \approx 10.67$ inches.
- 9) **Choice A is correct.** (7.SP.6) Experimental probability = $\frac{87}{180} \approx 0.483$, which rounds to approximately 0.48.
- 10) **Choice A is correct.** (7.SP.5-7.SP.8) A standard die only has faces 1–6, so rolling a 7 is impossible (probability = 0).
- 11) **Choice C is correct.** (7.RP.3) Percent error = $\frac{|36-45|}{45} \times 100\% = \frac{9}{45} \times 100\% = 20\%$.
- 12) **The correct answer is Class 1.** (7.SP.3) Both classes may have the same median of 30 sit-ups, but the distribution shape matters. Class 1's tight clustering (small range) means less variability and easier group improvement. Class 2's spread (large range) indicates inconsistency within the group.
- 13) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -4 : $-4(3b) - 4(2) = -12b - 8$.
- 14) **Choice D is correct.** (7.RP.3) Option 1: $A = 1000 + 1000(0.04)(5) = 1000 + 200 = \1200 . Option 2: $A = 1200 + 1200(0.03)(5) = 1200 + 180 = \1380 . Option 2 is higher.
- 15) **Choice A is correct.** (7.NS.1-7.NS.3) $6 - (-1) = 6 + 1 = 7$.
- 16) **Choice D is correct.** (7.RP.3) Discount percent = $\frac{3}{15} \times 100 = 20\%$.
- 17) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 4 and 8 is 4. Factor: $4x + 8y = 4(x + 2y)$.
- 18) **Choice C is correct.** (7.SP.1-7.SP.4) 19% of 1200 = $0.19 \times 1200 = 228$ items.
- 19) **Choice C is correct.** (7.RP.3) 55% of 200 is $0.55 \times 200 = 110$ students.
- 20) **Choice D is correct.** (7.NS.1b) Subtract absolute values: $|14| - |-11| = 14 - 11 = 3$. Since $14 > |-11|$ and 14 is positive, the answer is 3.
- 21) **Choice C is correct.** (7.EE.1) When combining like terms, we add the coefficients but keep the variables and exponents unchanged. $4xy + 2xy = (4 + 2)xy = 6xy$, not $6x^2y^2$. The error is inflating the exponents.
- 22) **The correct answer is A,B.** (7.G.4-7.G.6) A is correct: volume $V = B \times h$ for any prism. B is correct: $V = 4^3 = 64 \text{ cm}^3$. C is false: doubling height doubles volume, not triples it. D is false: a triangular prism can have larger volume than a rectangular prism depending on dimensions.
- 23) **Choice B is correct.** (7.EE.4b) Multiply both sides by -3 and flip the sign: $x \geq -12$.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate marker at $(1, 0.7)$ shows $k = 0.7$. So the equation is $y = 0.7x$.
- 25) **Choice D is correct.** (7.RP.3) Months needed = $\$3,000 \div \$250 = 12$ months.
- 26) **Choice D is correct.** (7.NS.1-7.NS.3) Convert to common denominator 6: $1\frac{2}{6} + 2\frac{1}{6} = 3\frac{3}{6} = 3\frac{1}{2}$.
- 27) **Choice B is correct.** (7.NS.1-7.NS.3) $\frac{5}{6} \div \frac{5}{9} = \frac{5}{6} \times \frac{9}{5} = \frac{45}{30} = \frac{3}{2}$.
- 28) **Choice B is correct.** (7.NS.2d) Divide $3 \div 10 = 0.3$. Since the denominator is a power of 10, this terminates immediately.
- 29) **The correct answer is $\frac{8}{3}$.** (7.SP.1-7.SP.4) The ratio is $8 \div 3 = \frac{8}{3}$.
- 30) **Choice A is correct.** (7.NS.1-7.NS.3) Final level = $12.5 - 2.3 + 1.8 - 0.5 = 11.5 \text{ cm}$.



Hi, Math Hero!

◇ This full-length book gave you ten complete Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. You showed up for Grade 7 practice again and again. That is what real growth looks like: steady effort, honest review, and a willingness to try. ◇

★ **Remember this:** A math hero is not someone who never misses a question. A math hero learns from the miss and comes back stronger. ★

Hero Habits

- **Courage:** You try problems that are not automatic.
- **Honesty:** You review what needs work.
- **Patience:** You let skills grow over time.
- **Pride:** You recognize the effort you gave.

Grade 7 test-day tip: Save one solved problem you are proud of. Looking back at progress helps motivation stay strong.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Math Hero Guide

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 10 full-length Math practice tests and 2 extra 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:

10 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answer 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



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Deeper Understanding

Reinforce key concepts with clear explanations and meaningful practice.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Fractions & Decimals
- ✓ Percents
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ And More!



2 EXTRA ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.



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SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED