

4

Rhode Island

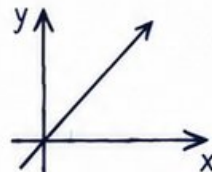
RICAS

GRADE
7
MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs

$$y = mx + b$$



$$\frac{2x}{3} + \frac{x}{6} = 2$$



$$V = \frac{1}{3} \pi r^2 h$$



4 PRINTED TESTS



2 ONLINE TESTS



USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



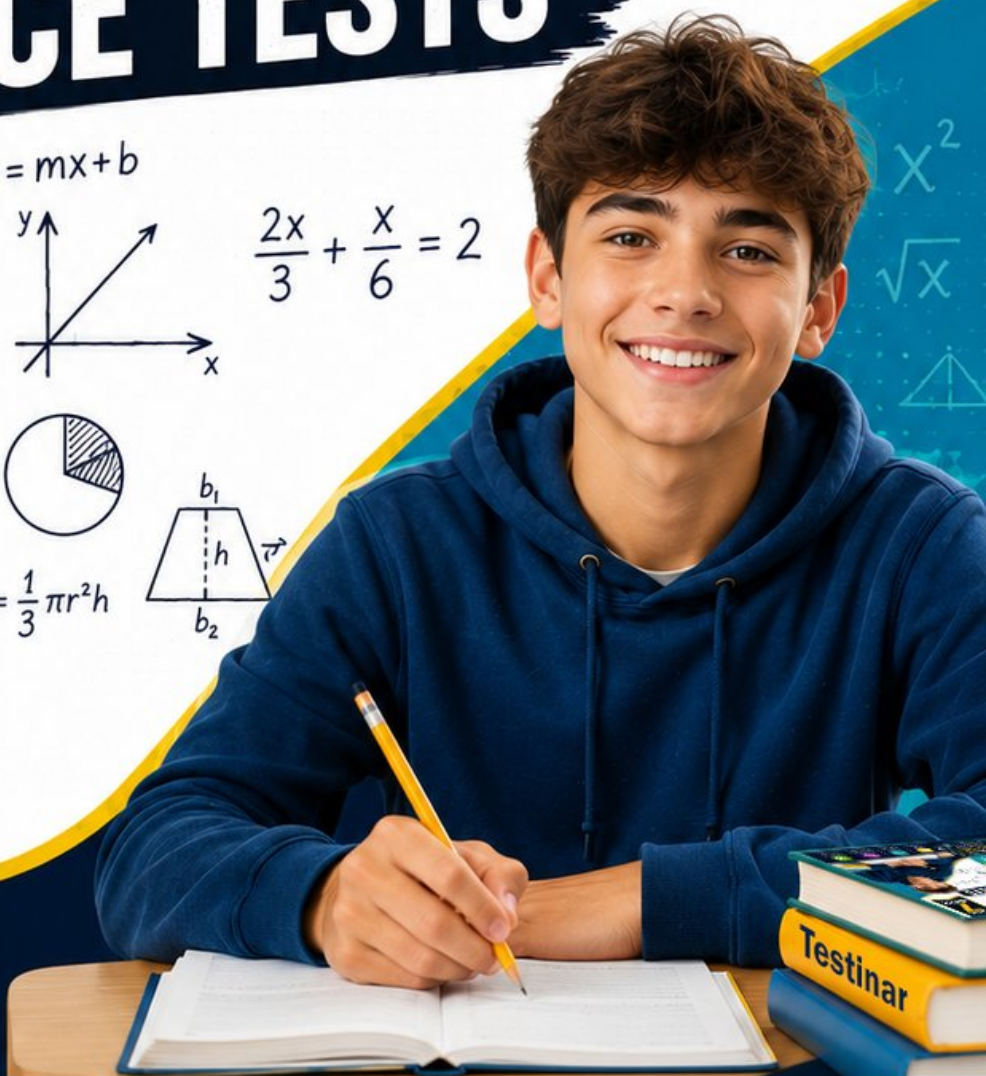
Strengthen
Math Skills



Detailed Answers
& Explanations

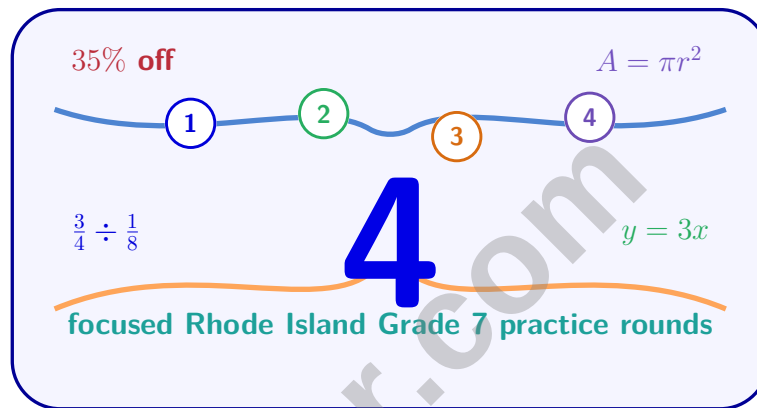


Improve Test
Performance



4 Rhode Island RICAS Grade 7 Math Practice Tests

Four Aligned Practice Rounds for RICAS Math Skills



Four 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!

Four focused rounds for sharper RICAS math thinking

This book gives you four 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 four-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?

Four RICAS tests, 160 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 3–4	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.



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& answers

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1) A young entrepreneur receives a business loan of \$8500 at 8.5% simple interest. If the loan is for 18 months, what is the total amount that must be repaid?

- ☐ A. \$10725 ☐ C. \$10187.50
☐ B. \$9722.50 ☐ D. \$9587.50

2) A hula hoop has circumference 188.4 cm. Using $\pi \approx 3.14$, what is its radius?

- ☐ A. 90 cm ☐ C. 15 cm
☐ B. 60 cm ☐ D. 30 cm

3) If a cylinder has a volume of 628 cubic feet and a height of 10 feet, what is the radius? Use $\pi \approx 3.14$.

- ☐ A. 2 feet ☐ C. 4.47 feet
☐ B. 3.16 feet ☐ D. 5 feet

4) Two student groups' homework completion times (in minutes):

Group	Mean	Median	Range
Group 1	30	32	10
Group 2	28	25	30

Which inference is most justified?

- ☐ A. Group 1 works faster on average ☐ C. Group 1 is more efficient because median exceeds mean
☐ B. Group 2 students have more variable completion times ☐ D. Both groups have identical distributions



5) A box plot for test scores in two classes shows: Class X (min 50, Q1 75, median 82, Q3 90, max 100) vs. Class Y (min 60, Q1 80, median 84, Q3 88, max 98). Which comparison is valid?

- ☐ A. Class X has higher median scores
- ☐ B. Class Y has a larger spread (range: 38 vs. 50)
- ☐ C. Class Y's quartile-to-quartile spread ($IQR = 8$) is smaller than Class X's ($IQR = 15$)
- ☐ D. Class X students performed better overall

6) A deck contains 52 cards: 13 hearts, 13 diamonds, 13 clubs, and 13 spades. A card is drawn at random. What is the probability of drawing a heart or a diamond?

- ☐ A. $\frac{1}{4}$
- ☐ B. $\frac{1}{2}$
- ☐ C. $\frac{3}{13}$
- ☐ D. $\frac{1}{3}$

7) If $a + (-a) = 0$, and $a = 27$, what is the value of $-a$?

8) A bag contains 3 red marbles and 5 blue marbles. What is the probability of drawing a red marble first, WITHOUT replacing it, then drawing a blue marble?

- ☐ A. $\frac{3}{8} \cdot \frac{5}{8}$
- ☐ B. $\frac{3}{8} \cdot \frac{4}{7}$
- ☐ C. $\frac{15}{56}$
- ☐ D. $\frac{15}{64}$



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- 9) Two dot plots show the number of pages read daily by two book clubs. Club 1: 20, 22, 22, 25, 25, 25, 25, 28, 30 pages; Club 2: 10, 15, 25, 30, 35, 40 pages. Which club's reading habits are most consistent?
- ☐ A. Club 1 (centers around 25 pages) ☐ D. Club 2 (wider range offers flexibility)
- ☐ B. Club 2 (reads more pages overall)
- ☐ C. Both clubs read the same amount
- 10) A spinner was spun 200 times with four equal sections labeled A, B, C, and D. Section A appeared 58 times. Which best describes the relationship between the experimental and theoretical probabilities for landing on A?
- ☐ A. Both are exactly 0.25. ☐ C. Experimental is 0.25; theoretical is 0.29.
- ☐ B. Experimental is 0.58; theoretical is 0.20. ☐ D. Experimental is 0.29; theoretical is 0.25.
- 11) In a stem-and-leaf plot for ages of people at an event, Stem 2 has 5 leaves, Stem 3 has 8 leaves, and Stem 4 has 3 leaves. What is the total frequency?
- ☐ A. 14 ☐ C. 16
- ☐ B. 15 ☐ D. 17
- 12) A composite shape is made of two triangles sharing a common base. The base is 6 cm and each triangle has a height of 4 cm. What is the combined area?
- ☐ A. 12 cm^2 ☐ C. 36 cm^2
- ☐ B. 24 cm^2 ☐ D. 48 cm^2



1) A water pipe has radius 3.5 cm. Using $\pi \approx \frac{22}{7}$, what is the circumference?

☐ A. 22 cm

☐ C. 88 cm

☐ B. 44 cm

☐ D. 11 cm

2) A square tile has an area of 169 square inches. What is the side length of the tile?

☐ A. 11 inches

☐ C. 13 inches

☐ B. 12 inches

☐ D. 14 inches

3) A stock investment grows from \$5,000 to \$5,500 in one year. What is the percentage growth?

4) The temperature was -3°C at dawn. By noon, it had risen 18°C . What was the noon temperature?

5) A book costs \$25. With sales tax of 6%, what is the total cost?

☐ A. $25 + 6$

☐ C. 25×1.06

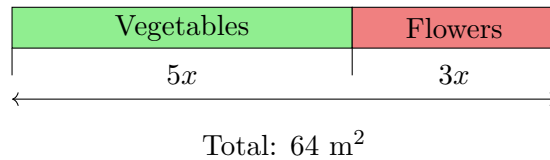
☐ B. 25×0.06

☐ D. $25 - 0.06$



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- 6) A garden is divided into two sections in the ratio 5 : 3 (vegetables to flowers). If the total area is 64 square meters, what is the area for vegetables?



- ☐ A. 30 m²
☐ C. 40 m²
☐ B. 35 m²
☐ D. 45 m²
- 7) An obtuse isosceles triangle has a base angle of 20°. What is the measure of the vertex angle (the angle between the two equal sides)?
- ☐ A. 20°
 ☐ C. 140°
☐ B. 40°
 ☐ D. 160°
- 8) If a number is positive, its opposite is:
- ☐ A. Negative
 ☐ C. Zero
☐ B. Positive
 ☐ D. The same magnitude doubled
- 9) Which statement is TRUE about the expression $6ab + 3ba$?
- ☐ A. They are not like terms because of different order.
 ☐ C. Like terms must have variables in the same order.
☐ B. They simplify to $9ab$.
 ☐ D. The terms cannot be combined.
- 10) Factor completely: $15x + 35$
- ☐ A. $5(3x + 7)$
☐ C. $15(x + 2.33)$
☐ B. $7(2x + 5)$
☐ D. $3(5x + 11.67)$



1) Which fraction in simplest form equals 0.8?

- ☐ A. $\frac{4}{5}$
☐ B. $\frac{3}{5}$

- ☐ C. $\frac{4}{50}$
☐ D. $\frac{2}{25}$

2) Two histograms show the battery life (in hours) of two phone models. Model X: life concentrated at 18–20 hours. Model Y: life spread across 12–24 hours with peak at 16 hours. Which model would you recommend based on predictability?

- ☐ A. Model X (you can predict it will last about 19 hours)
☐ B. Model Y (it can last up to 24 hours)
- ☐ C. Both models are equally predictable
☐ D. Model Y (wider range means more flexibility)

3) A rectangular piece of fabric (25 inches $\times$ 16 inches) has two identical right triangles (5 inches $\times$ 4 inches) removed from opposite corners. What is the remaining area?

- ☐ A. 360 in²
☐ B. 380 in²
- ☐ C. 400 in²
☐ D. 420 in²

4) A rectangular prism has a square base with side length 7 cm and a height of 11 cm. What is the volume?

- ☐ A. 49 cm³
☐ B. 77 cm³
- ☐ C. 539 cm³
☐ D. 1,078 cm³

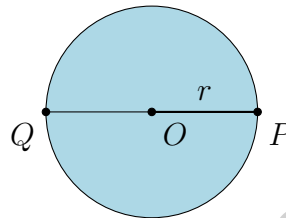
5) A temperature drops 45°F over 9 hours. What is the average drop per hour?



6) If a triangle has sides a , b , and c where c is the longest side, and $c^2 = a^2 + b^2$, what angle measure can we conclude?

- ☐ A. The angle opposite c is 90°
☐ C. The angle opposite c is obtuse
☐ B. The angle opposite c is acute
 ☐ D. All angles are equal

7) The diagram below shows a circle with center O .



Which line segment is the radius of the circle?

- ☐ A. OP
☐ C. PQ
☐ B. OQ
☐ D. QP

8) Simplify: $-2m - 5m + 3n + n$

- ☐ A. $-7m + 4n$
☐ C. $-7m + 3n$
☐ B. $-3m + 4n$
☐ D. $7m + 4n$

9) A student factors $-8m - 12$ and gets $-4(2m + 3)$. Is this correct?

- ☐ A. Yes; $-4(2m + 3) = -8m - 12$
☐ D. No; the correct factorization is $-4(2m - 3)$
☐ B. No; the GCF should be -2
☐ C. No; the correct factorization is $4(2m + 3)$



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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 D is correct.** (7.RP.3) STEP 1: Convert months to years: $t = 18 \div 12 = 1.5$ years. STEP 2: $I = 8500 \times 0.085 \times 1.5 = \1087.50 . STEP 3: $A = 8500 + 1087.50 = \$9587.50$.
- 2) **Choice D is correct.** (7.G.4-7.G.6) $C = 2\pi r \Rightarrow 188.4 = 2 \times 3.14 \times r \Rightarrow r = 188.4 \div 6.28 = 30$ cm.
- 3) **Choice C is correct.** (7.G.4-7.G.6) $628 = 3.14 \times r^2 \times 10 \Rightarrow r^2 = 20 \Rightarrow r \approx 4.47$ feet.
- 4) **Choice B is correct.** (7.SP.1-7.SP.4) Variability is measured by range. Group 2's range (30 min) is triple Group 1's range (10 min), indicating much more variable completion times in Group 2. The mean-median relationships also suggest outliers in both groups, but the range directly shows variability in homework times.
- 5) **Choice C is correct.** (7.SP.1-7.SP.4) IQR = Q3 - Q1. For Class X: $90 - 75 = 15$. For Class Y: $88 - 80 = 8$. A smaller IQR indicates more consistency in the middle 50% of scores.
- 6) **Choice B is correct.** (7.SP.5-7.SP.8) Hearts + diamonds = $13 + 13 = 26$. $P(\text{heart or diamond}) = \frac{26}{52} = \frac{1}{2}$.
- 7) **The correct answer is -27.** (7.NS.1-7.NS.3) Since $a = 27$, the opposite (additive inverse) is $-a = -27$. We can verify: $27 + (-27) = 0$.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Without replacement: $P(\text{red first}) = \frac{3}{8}$, then $P(\text{blue second}) = \frac{5}{7}$ (only 7 left). Product: $\frac{3}{8} \cdot \frac{5}{7} = \frac{15}{56}$.
- 9) **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.
- 10) **Choice D is correct.** (7.SP.6) Experimental probability (0.29) is based on observed data and differs from theoretical probability (0.25) because of random variation. Both values are relative frequencies—ratios of favorable outcomes to total trials.
- 11) **Choice C is correct.** (7.SP.1-7.SP.4) Total frequency = $5 + 8 + 3 = 16$ data points.
- 12) **Choice B is correct.** (7.G.4-7.G.6) Calculate the area of each triangle using the formula $\frac{1}{2} \times b \times h$. Each triangle: $\frac{1}{2} \times 6 \times 4 = 12$ cm². Add the two triangles: $12 + 12 = 24$ cm².
- 13) **Choice B is correct.** (7.G.4-7.G.6) $V = B \times h = 24 \times 6 = 144$ in³.
- 14) **Choice A is correct.** (7.G.1-7.G.5) An equilateral triangle has all sides and all angles equal. Since the angle sum is 180° and all three angles are equal, each angle is $180^\circ \div 3 = 60^\circ$.
- 15) **Choice B is correct.** (7.G.4-7.G.6) A chord with length equal to the diameter must be the diameter itself, as the diameter is the longest possible chord in a circle.
- 16) **Choice A is correct.** (7.SP.5-7.SP.8) $\frac{1}{3} = 0.\bar{3} \approx 0.33$ when rounded to the nearest hundredth.
- 17) **Choice B is correct.** (7.SP.1-7.SP.4) Larger random samples produce more stable and reliable estimates because they reduce the effect of random variability. Increasing sample size is the proper way to improve the reliability of a sample estimate. Options A (biased region), C (leading questions), and D (discarding data) are not valid approaches.
- 18) **The correct answer is A,D.** (7.RP.1-7.RP.3) A and D are unit rates because each gives a price per single unit of weight. Option B is a distance, and option C is a total count.
- 19) **Choice D is correct.** (7.NS.1-7.NS.3) $-7 - (-7) = -7 + 7 = 0$. Any number minus itself equals 0.
- 20) **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.
- 21) **Choice D is correct.** (7.RP.3) The tax is 8% of \$120: $0.08 \times 120 = 9.60$ dollars.
- 22) **Choice B is correct.** (7.SP.1-7.SP.4) 12.5% of $360^\circ = 0.125 \times 360^\circ = 45^\circ$.
- 23) **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.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) From unit rate (1, 0.7), at $x = 2$, $y = 2 \times 0.7 = 1.4$ meters.
- 25) **Choice D is correct.** (7.RP.3) Set up the proportion $\frac{15}{25} = \frac{p}{100}$. Solving gives $p = 60$, so 60% play a sport.
- 26) **The correct answer is 100.** (7.NS.1-7.NS.3) Perimeter = $4s = 40$, so $s = 10$ cm. Area = $s^2 = 10^2 = 100$ cm².
- 27) **The correct answer is \$120.** (7.EE.1-7.EE.2) Both $200 - 0.4(200)$ and $200(1 - 0.4)$ simplify to $200(0.6) = 120$. A 40% discount leaves 60% of the original price.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{3/4}{5/8} = \frac{3}{4} \times \frac{8}{5} = \frac{24}{20} = \frac{6}{5} = 1\frac{1}{5}$ cups per full batch.



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You Are Building Test Stamina

Hi, Stamina Builder!

◇ This carefully paced book gave you four steady Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 7 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

Your Test-Stamina Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **4** 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:

4 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!



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2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

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