

10

New Hampshire NH SAS

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



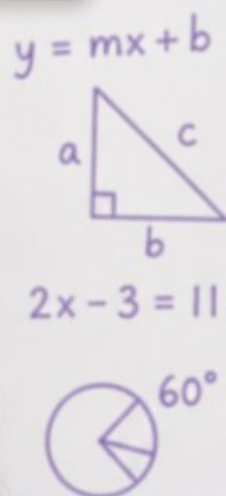
DETAILED ANSWER EXPLANATIONS

Learn with step-by-step
solutions



FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice



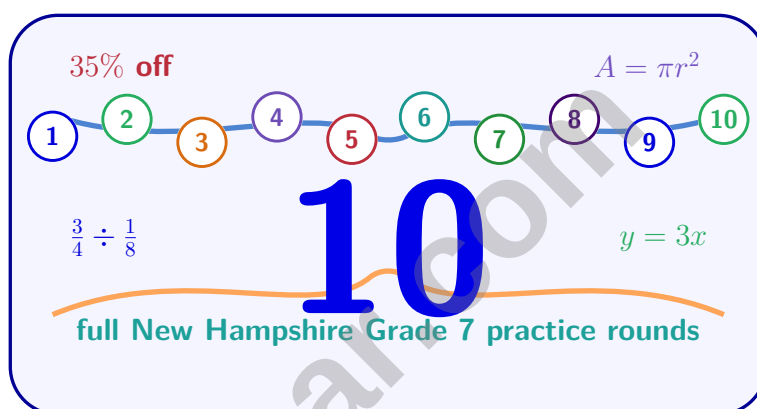
10 PRINTED TESTS
+2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 New Hampshire NH SAS Grade 7 Math Practice Tests

New Hampshire Grade 7 NH SAS Practice for trail-ready review across rates, rational numbers, equations, geometry, data, and probability



Ten complete 40-question Grade 7 NH SAS 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, New Hampshire Grade 7 Problem Solver!

Ten focused rounds for sharper New Hampshire NH SAS math
thinking

This book gives you ten full Grade 7 NH SAS 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 New Hampshire 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.

New Hampshire 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 New Hampshire NH SAS 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 New Hampshire 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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- 1) A movie theater applies a \$1.50 processing fee to online ticket orders. If a customer buys 4 tickets at \$12 each, what is the total cost?

☐ A. \$48.00 ☐ C. \$50.00
☐ B. \$52.50 ☐ D. \$49.50

- 2) Simplify: $p^6 \cdot p^2 \cdot p^0$

☐ A. p^8 ☐ C. p^7
☐ B. p^{12} ☐ D. 1

- 3) Expand and simplify: $2(3a + 4b) - 5a$.

☐ A. $6a + 8b - 5a = a + 8b$ ☐ C. $6a + 4b$
☐ B. $a + 4b$ ☐ D. $11a + 8b$

- 4) A taxi charges \$2.50 per mile plus a \$3 base fee. If a ride costs \$13, how many miles was the ride?

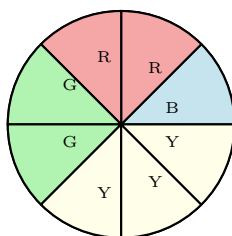
☐ A. 2 miles ☐ C. 6 miles
☐ B. 4 miles ☐ D. 8 miles

- 5) 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



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6)

A spinner has 8 equal sections with colors: Blue (1), Red (2), Green (2), Yellow (3). What is the probability of spinning Green?

- ☐ A. $\frac{1}{8}$
☐ B. $\frac{1}{4}$

- ☐ C. $\frac{3}{8}$
☐ D. $\frac{3}{10}$

7) A person selects a main color (Red, Blue) and a secondary color (Yellow, Green, Purple). How many color combinations are possible?

- ☐ A. 5
☐ B. 6

- ☐ C. 7
☐ D. 8

8) A deck contains 20 cards: 8 red and 12 black. A card is drawn, NOT replaced, and then another is drawn. What is the probability the first is red and the second is black?

- ☐ A. $\frac{96}{380}$
☐ B. $\frac{8}{20} \cdot \frac{12}{20}$

- ☐ C. $\frac{24}{95}$
☐ D. $\frac{96}{400}$

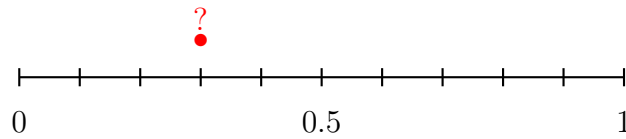
9) A quality control test found that out of 750 items produced, 12 were defective. What is the experimental probability that an item is defective?

- ☐ A. $\frac{12}{750}$
☐ B. $\frac{3}{125}$

- ☐ C. 0.12
☐ D. $\frac{1}{12}$



10) A probability number line is shown below.



Which probability is marked on the number line?

☐ A. 0.1

☐ C. 0.3

☐ B. 0.2

☐ D. 0.4

11) A student estimated a room to be 12 meters wide, but the actual width is 10 meters. What is the percent error?

☐ A. 2%

☐ C. 10%

☐ B. 15%

☐ D. 20%

12) Expand: $(x + 5) \cdot (-2)$

☐ A. $-2x - 10$

☐ C. $2x - 10$

☐ B. $-2x + 5$

☐ D. $x - 10$

13) An investment of \$3000 earns \$270 in simple interest over 2 years. What is the annual interest rate?

☐ A. 3%

☐ C. 5%

☐ B. 9%

☐ D. 4.5%



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1) A teacher wants to know if two classes have similar skill levels in writing. Which pair of statistics should she compare?

- ☐ A. Only the ranges ☐ C. Only mode
☐ B. Medians and IQRs (center and spread) ☐ D. Only the maximum scores

2) A dot plot shows the distance (in kilometers) traveled by two cycling groups in one afternoon. Group 1: 10, 12, 12, 13, 13, 14 km; Group 2: 5, 8, 15, 18, 22, 25 km. Which group had a more predictable cycling distance?

- ☐ A. Group 1 (range 4 km, clustered 12–13) ☐ C. Both groups have the same predictability
☐ B. Group 2 (wider range, more adventure) ☐ D. Group 2 (higher average distance)

3) A bicycle costs \$140 before tax. If the sales tax is 9%, and then a 15% discount coupon is applied to the pre-tax price, what is the final cost?



- 4) A teacher records test scores and displays them in a stem-and-leaf plot. If the plot shows:

Stem	Leaves
6	5, 7, 9
7	2, 2, 4, 8
8	1, 3, 6
9	0, 4

How many students scored between 72 and 86 (inclusive)?

- ☐ A. 4
- ☐ B. 6
- 5) A mosaic is a square ($14\text{ cm} \times 14\text{ cm}$) with four identical corner triangles removed (each $3\text{ cm} \times 3\text{ cm}$ right triangle). What is the remaining area?
- ☐ A. 160.5 cm^2
- ☐ B. 178 cm^2
- ☐ C. 196 cm^2
- ☐ D. 205.5 cm^2
- 6) A triangular prism has a right-triangular base with legs 7 cm and 4 cm , and a depth of 9 cm . What is the volume?
- ☐ A. 20 cm^3
- ☐ B. 63 cm^3
- ☐ C. 126 cm^3
- ☐ D. 252 cm^3
- 7) A student claims that $4xy + 2xy = 6x^2y^2$. What is the error?
- ☐ A. There is no error.
- ☐ B. The answer should be negative.
- ☐ C. The exponents should not have been increased.
- ☐ D. The coefficients were not added.



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- 1) A trapezoidal prism has a trapezoidal base with parallel sides 4 cm and 6 cm and a height of 3 cm (height of the trapezoid). The depth of the prism is 10 cm. What is the volume? (Area of trapezoid = $\frac{1}{2}(b_1 + b_2) \times h$)
- ☐ A. 60 cm³ ☐ C. 150 cm³
☐ B. 75 cm³ ☐ D. 300 cm³
- 2) A video streaming service found that 8% of its 50,000 users watch documentaries. How many users watch documentaries?
- ☐ A. 800 ☐ C. 6000
☐ B. 4000 ☐ D. 8000
- 3) A perimeter of a square is $4(2b + 1)$. Which expression is equivalent?
- ☐ A. $8b + 4$ ☐ C. $6b + 5$
☐ B. $8b + 1$ ☐ D. $2b + 5$

Simplify the expression below:

$$\frac{(j^3)^2}{j^5}$$

Which law applies FIRST?

4)

Power Rule

Product Rule

Simplify $\frac{(j^3)^2}{j^5}$:

- ☐ A. j^1 or j ☐ C. j^{11}
☐ B. j^7 ☐ D. j^{30}



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Fixed	$3w$ variable
-------	---------------

5)

Total = 85 lbs

A shipping service charges a \$10 fixed packaging fee and \$3 per pound for the item weight. The bar model shows this cost structure. Which equation models the total cost C for an item weighing w pounds?

☐ A. $C = 3w + 10$

☐ C. $C = 3 + 10w$

☐ B. $C = 10w + 3$

☐ D. $C = 10(3w)$

6) Solve for x : $5(x + 3) = 2x + 36$

☐ A. $x = 3$

☐ C. $x = 7$

☐ B. $x = 5$

☐ D. $x = 9$

7) Which step has an error in solving $\frac{1}{2}x + 6 = 10$?

Step	Equation
Start	$\frac{1}{2}x + 6 = 10$
Step 1	$\frac{1}{2}x = 16$
Step 2	$x = 32$

☐ A. No error; all correct

☐ C. Error in Step 2; should be $x = 8$

☐ B. Error in Step 1; should be $\frac{1}{2}x = 4$

☐ D. Errors in both steps



New Hampshire NH SAS 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 New Hampshire NH SAS 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) Ticket cost = $4 \times 12 = \$48$. Total = $48 + 1.50 = \$49.50$.
- 2) **Choice A is correct.** (7.EE.1-7.EE.2) Since $p^0 = 1$, we have $p^6 \cdot p^2 \cdot p^0 = p^6 \cdot p^2 \cdot 1 = p^{6+2} = p^8$.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $2(3a) + 2(4b) - 5a = 6a + 8b - 5a$. Combine a terms: $6a - 5a + 8b = a + 8b$.
- 4) **Choice B is correct.** (7.EE.3-7.EE.4) Set up: $2.50m + 3 = 13 \Rightarrow 2.50m = 10 \Rightarrow m = 4$.
- 5) **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 $14.5 + 0.5 = 15$ cm.
- 6) **Choice B is correct.** (7.SP.5-7.SP.8) Green sections: 2 out of 8. $P(\text{green}) = \frac{2}{8} = \frac{1}{4}$.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) Main colors: 2; secondary colors: 3. Total: $2 \times 3 = 6$ combinations.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Without replacement: $P(\text{red first}) = \frac{8}{20}$. After removing it, 19 remain. $P(\text{black second}) = \frac{12}{19}$. Product: $\frac{8}{20} \cdot \frac{12}{19} = \frac{96}{380} = \frac{24}{95}$.
- 9) **Choice A is correct.** (7.SP.6) Experimental probability of defect = $\frac{12}{750}$. This simplifies to $\frac{2}{125} = 0.016$. Option A is the most direct answer from the data.
- 10) **Choice C is correct.** (7.SP.5-7.SP.8) The point is at the third tick mark from 0 to 1, which represents 0.3.
- 11) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|12-10|}{10} \times 100\% = \frac{2}{10} \times 100\% = 20\%$.
- 12) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -2 to both terms: $(x) \cdot (-2) + (5) \cdot (-2) = -2x - 10$.
- 13) **Choice D is correct.** (7.RP.3) $270 = 3000 \times r \times 2 \Rightarrow 270 = 6000r \Rightarrow r = 0.045 = 4.5\%$.
- 14) **Choice B is correct.** (7.NS.1-7.NS.3) Moving right (positive direction) from -2 is the same as subtracting a negative. $-2 - (-6) = -2 + 6 = 4$.
- 15) **The correct answer is 20.** (7.G.4-7.G.6) $V = \pi r^2 h \Rightarrow 565.2 = 3.14 \times 9 \times h \Rightarrow 565.2 = 28.26h \Rightarrow h = 20$ feet.
- 16) **The correct answer is 8.5.** (7.SP.1-7.SP.4) The sample mean of 8.5 hours is used to estimate the population parameter. Since the sample is random and reasonably sized, this sample mean is a good estimate for the entire population.
- 17) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply each dimension by the scale factor: $3 \times 8 = 24$ feet and $2.5 \times 8 = 20$ feet.
- 18) **Choice D is correct.** (7.RP.3) First find the whole: $56 = 0.70 \times n$, so $n = 80$. Then 30% of 80 is $0.30 \times 80 = 24$.
- 19) **The correct answer is A,B.** (7.G.4-7.G.6) Choice A: Diameter = $2r = 2 \times 6 = 12$ m is correct. Choice B: Area = $3.14 \times 6^2 = 113.04$ m² is correct. C confuses circumference with area (37.68 m vs m²). D fails because square area is 36 m², much less than circle's 113.04 m².
- 20) **Choice D is correct.** (7.RP.3) Selling price = cost $\times 1.30$. So $84 = \text{cost} \times 1.30$, giving cost = $84 \div 1.30 \approx \$64.62$.
- 21) **Choice A is correct.** (7.NS.1b) Subtract the smaller absolute value from the larger: $|12| - |-5| = 12 - 5 = 7$. The larger absolute value is positive, so the answer is 7.
- 22) **Choice A is correct.** (7.EE.1) Combine: $\frac{1}{3}a + \frac{2}{3}a + b = a + b$.
- 23) **Choice A is correct.** (7.EE.1-7.EE.2) Factor out -10 : $-10x - 20 = -10(x + 2)$. Check: $-10(x + 2) = -10x - 20$.
- 24) **Choice B is correct.** (7.SP.5-7.SP.8) $\frac{2}{5}$ probability requires 2 favorable outcomes out of 5 equally likely ones. Option B directly represents this ratio.
- 25) **The correct answer is 75–85.** (7.SP.3) Overlap at 75–85 demonstrates that distributions can have different centers and spreads while still sharing common values. A higher median does not mean every value in one group exceeds every value in the other.
- 26) **Choice C is correct.** (7.SP.1-7.SP.4) 32% of 450 = $0.32 \times 450 = 144$ customers.
- 27) **Choice C is correct.** (7.RP.1-7.RP.3) Unit rate: $\$52 \div 4 = \13 per pizza. For 7 pizzas: $7 \times \$13 = \91 .
- 28) **Choice B is correct.** (7.NS.1-7.NS.3) When denominators are the same, add the numerators: $-\frac{3}{5} + \frac{4}{5} = \frac{1}{5}$.
- 29) **Choice A is correct.** (7.NS.1-7.NS.3) $1\frac{1}{2} = \frac{3}{2}$. Then $\frac{3}{2} \div \frac{1}{4} = \frac{3}{2} \times \frac{4}{1} = 6$.
- 30) **Choice A is correct.** (7.NS.1-7.NS.3) New area = $120 + \frac{1}{3} \times 120 = 120 + 40 = 160$ sq ft.



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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.



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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SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED