

3

New Hampshire

NH SAS

GRADE

7

MATH

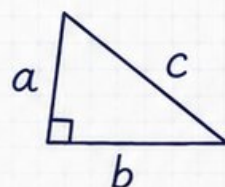
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



$$3(x - 2) = 2x + 5$$



3 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



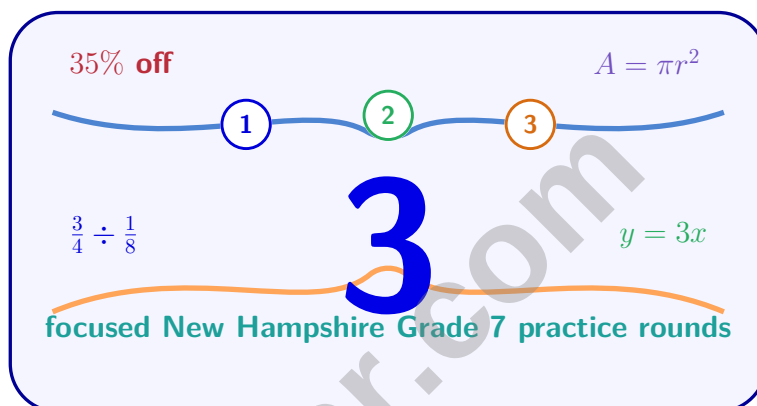
Detailed Answers
& Explanations



Improve Test
Performance

3 New Hampshire NH SAS Grade 7 Math Practice Tests

Grade 7 New Hampshire Practice with Standards-Based Support



Three 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!

Three focused rounds for sharper NH SAS math thinking

This book gives you three 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 three-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?

Three NH SAS tests, 120 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.
Test 3	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 student conducted a survey of 240 students about their favorite lunch. The results:

Choice	Pizza	Burger	Salad	Pasta
Count	84	72	36	48

Based on experimental data, what is the probability a student chooses either pizza or pasta?

- ☐ A. $\frac{48}{240}$
☐ B. $\frac{84}{240}$

- ☐ C. $\frac{132}{240}$
☐ D. $\frac{156}{240}$

- 2) A bank account has a balance of -45 dollars (overdrawn). After a deposit and withdrawal, the balance becomes -20 dollars. What was the net change in the account (deposit minus withdrawal)? Write your answer as an integer with the appropriate sign.

- 3) A student guessed that the temperature would be $68^{\circ}F$, but it was actually $75^{\circ}F$. What is the percent error?

- ☐ A. 7%
☐ B. 90.7%

- ☐ C. 10.2%
☐ D. 9.3%

- 4) Expand: $\frac{1}{4}(8b - 12)$

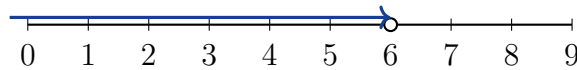
- ☐ A. $2b - 3$
☐ B. $2b - 12$

- ☐ C. $8b - 3$
☐ D. $2b - 4$

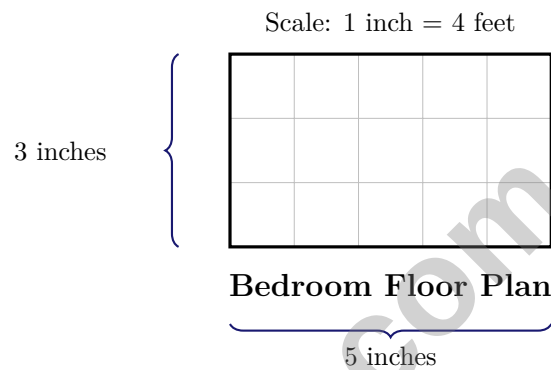


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5) Which graph represents $w < 6$?



- ☐ A. Closed circle at 6 pointing right ☐ C. Closed circle at 6 pointing left
☐ B. Open circle at 6 pointing left ☐ D. Open circle at 6 pointing right



6)

According to the floor plan, what is the actual area of the bedroom?

- ☐ A. 15 square feet ☐ C. 120 square feet
☐ B. 60 square feet ☐ D. 240 square feet
- 7) A family takes out a personal loan of \$8000 at 10% simple interest for 3 years. What is the total amount they will repay?
- ☐ A. \$8800 ☐ C. \$10400
☐ B. \$9200 ☐ D. \$11200



8) A number line arrow starts at -6 and ends at 9 . What integer was added?

☐ A. -15

☐ C. 3

☐ B. -3

☐ D. 15

9) A cyclist travels $\frac{5}{6}$ mile in $\frac{1}{4}$ hour. Find the cyclist's speed in miles per hour.

10) A bookstore has 400 books. If 22% of them are fiction, how many fiction books are there?

☐ A. 66

☐ C. 88

☐ B. 78

☐ D. 100

11) A coat priced at \$150 has a $\frac{1}{3}$ discount applied. What is the final price?

☐ A. \$200

☐ C. \$50

☐ B. \$125

☐ D. \$100

12) Which terms are like terms?

☐ A. $4x$ and $4y$

☐ C. $7m$ and $2m$

☐ B. $3x^2$ and $3x$

☐ D. $5xy$ and $5x$

13) A rectangular garden has an area of $12m + 20$ square meters. Which could be the dimensions?

☐ A. Length 3, width $4m + 5$

☐ C. Length 2, width $6m + 10$

☐ B. Length 4, width $3m + 5$

☐ D. Length 5, width $2.4m + 4$



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1) If angle x and angle y are complementary, and $x = 37^\circ$, what is y ?

☐ A. 53°

☐ C. 37°

☐ B. 43°

☐ D. 143°

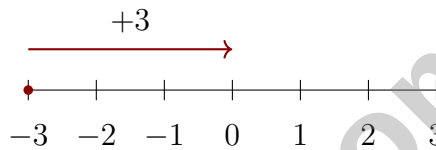
2) A rectangle has width x and length $2x + 3$. If the perimeter is 36 cm, what is the width?

☐ A. $x = 4$ cm

☐ C. $x = 6$ cm

☐ B. $x = 5$ cm

☐ D. $x = 8$ cm



3)

The number line shows a number increased by 3 equals 0. What is the original number?

☐ A. -3

☐ C. 0

☐ B. -2

☐ D. 3

4) A photograph is enlarged using a scale of 1 : 3 (meaning the enlargement is 3 times larger). If the original photo is 4 inches wide, how wide is the enlargement?

☐ A. 8 inches

☐ C. 12 inches

☐ B. 9 inches

☐ D. 15 inches

5) A rectangular park boundary on a city map is 11 cm by 13 cm. The scale is 1 cm : 200 m. What is the perimeter of the actual park in meters?

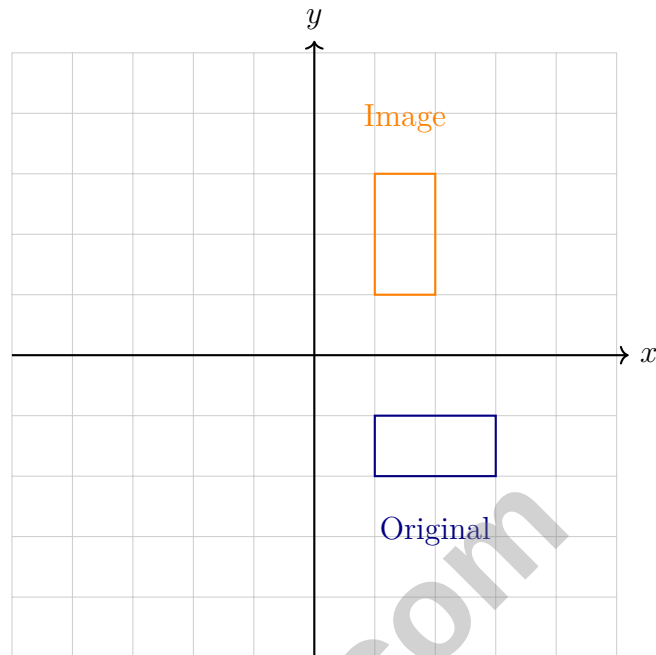
☐ A. 4,800 m

☐ C. 2,400 m

☐ B. 9,600 m

☐ D. 4,400 m





6)

The navy rectangle is transformed to the orange rectangle. Identify the transformation.

- ☐ A. Translation by $(0, 3)$
☐ C. Rotation of 90° counterclockwise about $(1, 0)$
- ☐ B. Rotation of 90° counterclockwise about the origin
 ☐ D. Reflection over the line $y = -1$

7) A plate has diameter 10 inches. Using $\pi \approx \frac{22}{7}$, approximately what is its circumference?

- ☐ A. $\frac{220}{7}$ in
 ☐ C. $\frac{440}{7}$ in
- ☐ B. $\frac{110}{7}$ in
 ☐ D. $\frac{80}{7}$ in



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- 1) A website offers two subscription plans. Plan A charges a \$15 base fee and \$3 per month. Plan B charges a \$8 base fee and \$4 per month. After how many months m will both plans cost the same? Which equation is correct?

☐ A. $3m + 15 = 4m + 8$

☐ C. $3m + 15 = 8m + 4$

☐ B. $15 + 3m = 8 + 4m$

☐ D. $15 + 3m = 4 + 8m$

- 2) A bag has 6 identical cards numbered 1 through 6. You draw two cards without replacement. Find $P(\text{both odd})$.

☐ A. $\frac{1}{5}$

☐ C. $\frac{1}{4}$

☐ B. $\frac{3}{5}$

☐ D. $\frac{1}{20}$

- 3) A car dealership charges a \$500 documentation fee on all vehicles sold. If a car sells for \$22,000, and a salesman earns 3% commission on the base price (before fees), what is the salesman's commission?

☐ A. \$750

☐ C. \$715

☐ B. \$675

☐ D. \$660

- 4) A proportional relationship is shown by a line through the origin and $(4, 6)$. What is the constant of proportionality?



5)

Category	Budget Amount
Rent	\$1 500
Utilities	\$250
Groceries	\$400
Transportation	\$300
Savings	\$550
Total	\$3 000

What percent of the budget goes to savings?

☐ A. 15%☐ C. 20%☐ B. 25%☐ D. 18%

6) A retirement fund of \$10,000 grows at 4% annual compound interest. The formula for the balance after t years is:

☐ A. $A = 10000 + 400t$ ☐ C. $A = 10000 \times 0.04 \times t$ ☐ B. $A = 10400^t$ ☐ D. $A = 10000(1.04)^t$

7) A restaurant's menu prices increased by 8%. If a meal was \$25, what is the new price?

☐ A. \$33☐ C. \$32☐ B. \$2☐ D. \$27

8) Calculate $6 + (-6)$.

☐ A. 0☐ C. -12☐ B. 12☐ D. 1

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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 C is correct.** (7.SP.6) Pizza: 84 students; Pasta: 48 students. Combined: $84 + 48 = 132$ out of 240 total.
- 2) **The correct answer is 25.** (7.NS.1-7.NS.3) Net change = final balance – initial balance = $-20 - (-45) = -20 + 45 = 25$ dollars. The account increased by 25 dollars (a net deposit of 25).
- 3) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|68-75|}{75} \times 100\% = \frac{7}{75} \times 100\% \approx 9.3\%$.
- 4) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute $\frac{1}{4}$: $\frac{1}{4}(8b) - \frac{1}{4}(12) = 2b - 3$.
- 5) **Choice B is correct.** (7.EE.4b) $w < 6$ is a strict inequality, so use an open circle at 6 with the arrow pointing left.
- 6) **Choice D is correct.** (7.RP.1-7.RP.3) Actual dimensions: $5 \times 4 = 20$ feet; $3 \times 4 = 12$ feet. Area = $20 \times 12 = 240$ sq ft.
- 7) **Choice C is correct.** (7.RP.3) $I = 8000 \times 0.10 \times 3 = \2400 . $A = 8000 + 2400 = \$10400$.
- 8) **Choice D is correct.** (7.NS.1b) If -6 plus an unknown value equals 9, then the unknown is 15 because $-6 + 15 = 9$. The distance from -6 to 9 is 15 units.
- 9) **The correct answer is $10/3$ mph.** (7.RP.1-7.RP.3) Unit rate = $\frac{5/6}{1/4} = \frac{5}{6} \times 4 = \frac{20}{6} = \frac{10}{3} = 3\frac{1}{3}$ mph.
- 10) **Choice C is correct.** (7.RP.3) 22% of 400 is $0.22 \times 400 = 88$ books.
- 11) **Choice D is correct.** (7.RP.3) Discount = $\frac{1}{3} \times 150 = \50 . Final price = $150 - 50 = \$100$.
- 12) **Choice C is correct.** (7.EE.1) Like terms have the same variable and exponent. Both $7m$ and $2m$ contain the variable m with exponent 1.
- 13) **Choice B is correct.** (7.EE.1-7.EE.2) Factor: $12m + 20 = 4(3m + 5)$. Dimensions are 4 and $3m + 5$.
- 14) **Choice B is correct.** (7.G.4-7.G.6) $SA = 2(12 \cdot 6 + 12 \cdot 5 + 6 \cdot 5) = 2(72 + 60 + 30) = 2(162) = 324$ in².
- 15) **Choice B is correct.** (7.SP.5-7.SP.8) Probability $\frac{1}{4}$ means 1 favorable outcome out of 4 equally likely ones.
- 16) **Choice C is correct.** (7.NS.1-7.NS.3) $-15 + 8 - 3 = -7 - 3 = -10$ points.
- 17) **Choice B is correct.** (7.NS.1-7.NS.3) Using multiplication as the inverse: $a = 4 \times (-3) = -12$.
- 18) **Choice B is correct.** (7.EE.1-7.EE.2) Multiply price per pound by number of pounds: $1.50w$.
- 19) **The correct answer is 1.5.** (7.RP.1-7.RP.3) The unit price is \$1.50 per apple, so the constant of proportionality is 1.5.
- 20) **Choice A is correct.** (7.EE.1-7.EE.2) Subtract: $(3x + 5) - (2x - 1) = 3x + 5 - 2x + 1 = x + 6$ miles farther.
- 21) **The correct answer is A,B.** (7.SP.1-7.SP.4) Smartphones (45%) is the largest, so A is correct. Tablets (20%) plus smart watches (5%) make 25%, so B is correct. Laptops (30%) is not more than 50%, and smart watches (5%) are not more than 10%.
- 22) **Choice A is correct.** (7.EE.4b) Add 2: $5x \geq 20$. Divide by 5: $x \geq 4$.
- 23) **Choice A is correct.** (7.G.1-7.G.5) A vertical plane through the apex creates a cross-section with two equal slant-height sides (both measured from apex to the base circle) and a base chord. Since the two slant sides are equal, the triangle is isosceles, regardless of where on the base circle the chord is positioned.
- 24) **Choice A is correct.** (7.G.1-7.G.5) Area scales by the square of the linear scale factor. If areas are 4 : 25, then the linear scale factor is $\sqrt{4} : \sqrt{25} = 2 : 5$.
- 25) **The correct answer is 3.** (7.RP.1-7.RP.3) $k = y/x = 18/6 = 3$.
- 26) **Choice B is correct.** (7.SP.1-7.SP.4) Phone directories only include people with listed landline numbers, which excludes people with unlisted numbers and younger voters who use only cell phones. This coverage bias makes the sample unrepresentative of all voters in the area.
- 27) **Choice C is correct.** (7.SP.1-7.SP.4) Reading the line graph from left to right: 72→74→75 (rise), 75→73→70→68 (fall), 68→71 (slight rise). This describes the overall pattern accurately.
- 28) **Choice C is correct.** (7.SP.5-7.SP.8) Faces showing 1: 2 out of 6. $P(\text{rolling } 1) = \frac{2}{6} = \frac{1}{3}$.
- 29) **Choice D is correct.** (7.RP.1-7.RP.3) Rate is $\frac{3 \text{ miles}}{30 \text{ min}} = 0.1$ miles per minute.
- 30) **Choice D is correct.** (7.RP.1-7.RP.3) From the unit-rate point (1, 0.5), at $x = 6$, $y = 6 \times 0.5 = 3$ pages.
- 31) **Choice D is correct.** (7.RP.3) The discount is $\frac{20}{100} \times 50 = 10$, so you save \$10.



The Power of Showing Work

Hi, Organized Solver!

◇ You practiced Grade 7 skills that often require more than one step. That means your written work matters. ◇

★ **Remember this:** Showing work is not extra. It is how you track your thinking, find errors, and prove that your answer did not happen by luck. You practiced across 3 full Grade 7 practice tests, and that repeated effort matters. ★

Organized Work Habits

- **One Line Per Step:** Keep the path readable.
- **Box the Answer:** Make the final result easy to find.
- **Use Labels:** Tell what each value represents.
- **Check the Path:** Follow your steps backward if needed.

Grade 7 test-day tip: When a problem has several steps, write less on each line. Space makes checking easier.

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

Jay Daie

Your Organized-Work Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** 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:

3 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.

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Practice regularly to feel prepared and test-ready.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Detailed Answers & Explanations

Learn from clear explanations and step-by-step solutions.



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TOPICS COVERED

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- ✓ 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.



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