

# New Hampshire

# NH SAS

## GRADE 6

# MATH

# PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs



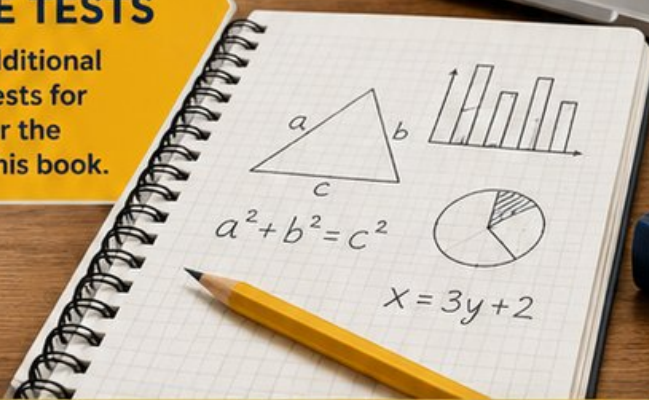
### 5 PRINTED TESTS

- ✓ Full-Length Practice Tests
- ✓ Realistic Questions
- ✓ Answer Key & Explanations



### + 2 ONLINE TESTS

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

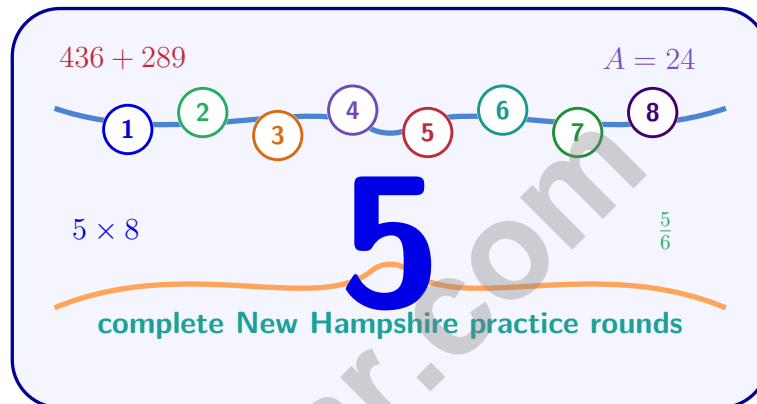


PREPARE • PRACTICE • SUCCEED



# 5 New Hampshire NH SAS Grade 6 Math Practice Tests

*Standards-Aligned Granite-State Precision for New Hampshire Statewide Assessment System*



Five complete 40-question Grade 6 practice rounds for NH SAS, built for granite-state precision with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

**Jay Daie and Reza Nazari**



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# Welcome, New Hampshire Math Explorer!

Eight focused rounds using granite-state precision

This book gives you five full Grade 6 practice tests for NH SAS. Each round uses mountain towns, forest trails, and crisp problem notes as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your New Hampshire Practice Promise

Build a solid solution: read closely, write the relationship, and test the answer.

Read

Plan

Check

## How to Use This Book

A five-session routine for granite-state precision

1. **Work in order.** Take one 40-question test at a time in a quiet place.
2. **Preview the skills.** Scan the quick review pages before beginning the first round.
3. **Correct actively.** Retry missed items before reading the full explanation.
4. **Mark confidence.** Put a small star beside problems where your plan felt strong.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

**New Hampshire review rhythm:** Complete a round, polish the rough spots, and start the next test with a clearer plan.



## What Is Inside?

Eight NH SAS tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–4	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 5	Final stamina round for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Granite-state precision means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



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For more practice  
& answers

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1) Marcus has \$5 and Jessica has a debt of \$3 (written as  $-3$ ). Who has more money?

- A. Marcus  C. They have the same  
 B. Jessica  D. Cannot determine

2) A researcher created a scatter plot comparing study hours (x-axis) and test scores (y-axis) for 8 students. The dots show a loose upward trend but with some scatter. What conclusion is MOST accurate?

- A. Study hours perfectly predict test scores  C. Students who study less always score higher  
 B. There is a weak positive correlation between study and scores  D. There is no relationship between study and test scores

3) A scale model of a swimming pool uses a scale of 1 inch = 8 feet. The model pool is a square with side length 2.5 inches. What is the actual area of the pool?

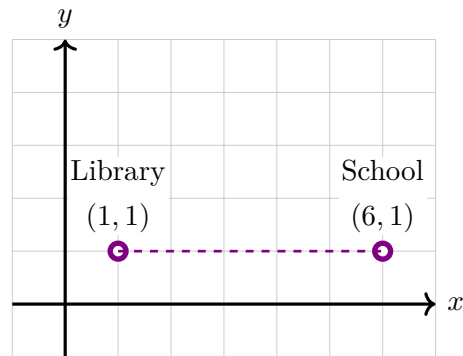
- A. 100 sq ft  C. 800 sq ft  
 B. 6400 sq ft  D. 400 sq ft

4) Compute:  $\frac{3}{5} \div \frac{1}{2}$

- A.  $\frac{3}{10}$   C.  $1\frac{1}{6}$   
 B.  $\frac{1}{6}$   D.  $\frac{6}{5}$

5) Find the mean of 48, 50, 52, 49, 51, 50, 48. Round to the nearest tenth.





6)

On a map, the library is at (1, 1) and the school is at (6, 1). If each unit is 200 meters, what is the distance?

- A. 600 m                       C. 1000 m  
 B. 800 m                       D. 1200 m



7)

The bar model shows wheat and coral sections. If the total bar represents 15 units, and the ratio is 2 : 1, how many units are in the wheat section?

- A. 5 units                       C. 7.5 units  
 B. 3 units                       D. 10 units

8) A paint manufacturer creates batches in which the ratio of red to blue to yellow is always 2 : 3 : 4. If a batch contains 8 liters of red paint, what is the total volume of the entire batch?

- A. 18 L                       C. 36 L  
 B. 24 L                       D. 48 L



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9) Which of the following is a rate?

- A. 3 boys to 4 girls  
 B. 60 miles per hour  
 C. 5 red marbles to 2 blue marbles  
 D. 8 pencils to 3 pens

10) A car travels 240 miles in 4 hours. What is the unit rate in miles per hour?

- A. 60 mph  
 B. 56 mph  
 C. 64 mph  
 D. 80 mph

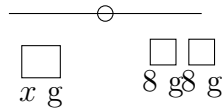
11) A recipe uses a ratio of 2 cups of flour to 3 cups of sugar. The table shows how much flour is needed for different amounts of sugar. What is the missing value?

Flour (cups)	Sugar (cups)
2	3
4	6
?	12

- A. 6  
 B. 8  
 C. 10  
 D. 12



- 1) A balance scale with a block on the left weighing  $x$  grams is balanced against 2 blocks on the right each weighing 8 grams. Which equation matches?

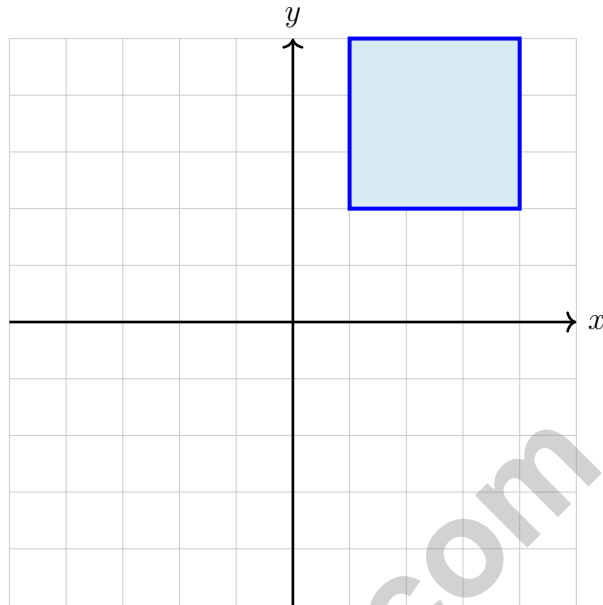


- A.  $x + 2 = 8$ 
 C.  $x = 8 - 2$   
 B.  $2x = 8$ 
 D.  $x = 8 + 8$
- 2) A parallelogram has an area of  $105 \text{ in}^2$  and a base of 15 in. What is the height?
- A. 6 in
  C. 8 in  
 B. 9 in
  D. 7 in
- 3) A sample of 6 salaries (in thousands):  $\{30, 35, 40, 42, 45, 90\}$ . How does the outlier affect statistics?
- A. Mean and median are equally affected.  
 B. Neither is affected by outliers.  
 C. The median is pulled higher; the mean is less affected.  
 D. The mean is pulled higher; the median is less affected.
- 4) The probability that it rains tomorrow is  $\frac{3}{5}$ . What is the probability that it does **not** rain?
- A.  $\frac{1}{5}$ 
 C.  $\frac{3}{5}$   
 B.  $\frac{2}{5}$ 
 D.  $\frac{4}{5}$



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1)

A quadrilateral has vertices at  $(1, 2)$ ,  $(4, 2)$ ,  $(4, 5)$ , and  $(1, 5)$ . It is translated 3 units to the left and 2 units up. What are the coordinates of the image of  $(4, 5)$ ?

- A.  $(1, 7)$                        C.  $(7, 3)$   
 B.  $(2, 3)$                        D.  $(2, 7)$

2) Which data set would have the largest mean?

- A. 1, 2, 3, 4, 5                       C. 2, 3, 4, 5, 6  
 B. 3, 4, 5, 6, 7                       D. 1, 2, 3, 4, 50

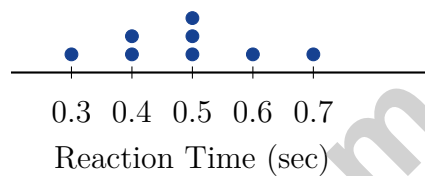
3) Calculate the MAD for the data: 1, 3, 5, 7, 9. (Mean = 5)

- A. 2                                       C. 3  
 B. 2.4                                    D. 5



4) Solve for  $x$ :  $2x = 14$ .

5) A dot plot shows reaction times (in seconds) for a reaction test: 0.3, 0.4, 0.4, 0.5, 0.5, 0.5, 0.6, 0.7. What is the mode of this data?



- A. 0.4 seconds
- B. 0.7 seconds
- C. 0.6 seconds
- D. 0.5 seconds
- 6) A score must be greater than 85 to earn an A. What is the least whole-number score?

7) A box plot shows  $Q1 = 20$ , median = 28,  $Q3 = 35$ , min = 5, max = 50. Are there outliers?

- A. No outliers.
- B. Yes, the maximum is an outlier.
- C. Yes, the minimum is an outlier.
- D. Both are outliers.



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## New Hampshire NH SAS Practice Test Answer Keys

**How to use this New Hampshire NH SAS answer section with a Grade 6 student:**

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to granite-state precision
3. rework the problem before reading the full explanation, using this reminder:  
Build a solid solution: read closely, write the relationship, and test the answer.

**A calm New Hampshire correction routine turns every missed item into useful practice. Complete a round, polish the rough spots, and start the next test with a clearer plan.**



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## New Hampshire Practice Test Answers and Explanations

Review the five printed NH SAS tests with solid, precise, and ready for the next trail habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (6.NS.C.7d)  $5 > -3$ , so Marcus has more money.
- 2) **Choice B is correct.** (6.RP.A.3) An upward trend with scatter indicates a positive correlation (as one variable increases, the other tends to increase), but the scatter shows the relationship is not perfect—it's weak to moderate, not deterministic.
- 3) **Choice D is correct.** (6.RP.A.3) Actual side:  $2.5 \times 8 = 20$  feet. Area:  $20 \times 20 = 400$  sq ft.
- 4) **Choice D is correct.** (6.NS.A.1)  $\frac{3}{5} \times 2 = \frac{6}{5}$ .
- 5) **The correct answer is 49.7.** (6.SP.B.5) The sum is 348, and  $348 \div 7 \approx 49.7$ .
- 6) **Choice C is correct.** (6.NS.C.8) Distance on map:  $|6 - 1| = 5$  units. Actual distance:  $5 \times 200 = 1000$  meters.
- 7) **Choice D is correct.** (6.RP.A.1) The whole bar has  $2 + 1 = 3$  equal ratio parts. Each part is  $15 \div 3 = 5$  units, and wheat is 2 parts:  $2 \times 5 = 10$  units.
- 8) **Choice C is correct.** (6.RP.A.3) Red is the 2-part amount, and  $8 \div 2 = 4$ , so each part is 4 L. The total ratio has  $2 + 3 + 4 = 9$  parts, and  $9 \times 4 = 36$  L.
- 9) **Choice B is correct.** (6.RP.A.3d) A rate compares quantities with different units. Option B compares distance (miles) to time (hours), which are different units. All other options compare quantities in the same category.
- 10) **Choice A is correct.** (6.RP.A.3b) Divide the total distance by time:  $240 \div 4 = 60$  miles per hour.
- 11) **Choice B is correct.** (6.RP.A.3) The ratio 2 : 3 is constant. When sugar is 12, multiply by 4:  $2 \times 4 = 8$  cups of flour.
- 12) **Choice B is correct.** (6.RP.A.3c) Shaded:  $3 \times 10 + 3 \times 5 = 30 + 15 = 45$  squares out of  $100 = 45\%$ .
- 13) **Choice A is correct.** (6.RP.A.3c) Increase is  $\$24 - \$20 = \$4$ . Percent increase is  $\frac{4}{20} = 0.20 = 20\%$ .
- 14) **The correct answer is 0.25.** (6.NS.B.3) One correct choice out of 4 possible choices. Probability =  $\frac{1}{4} = 0.25$ .
- 15) **Choice C is correct.** (6.RP.A.3) Rate is  $90 \div 2 = 45$  miles per hour. For 6 hours:  $45 \times 6 = 270$  miles.
- 16) **Choice C is correct.** (6.RP.A.3d) Reading the double number line: 2.5 kg is halfway between 2 kg (2000 g) and 3 kg (3000 g), so it equals 2500 g.
- 17) **Choice B is correct.** (6.NS.C.7d) Amy:  $\$8.00 \times 8 = \$64$ . Ben:  $\$7.00 \times 12 = \$84$ . So Ben earns more.
- 18) **The correct answer is The correct formula and calculation are**  $A = \frac{1}{2}(9 + 11) \times 6 = \frac{1}{2}(20)(6) = 60 \text{ in}^2$ . (6.G.A.1) Statements A and B are both correct. Statement C is wrong because height is also needed. Statement D is wrong because height is a perpendicular distance, not the sum of the bases. Statement E gives  $120 \text{ in}^2$ , which is incorrect.
- 19) **The correct answer is 43.** (6.SP.B.4) In order: 32, 35, 38, 41, 43, 46, 49, 50, 54. With 9 values (odd), the median is the 5th value: 43.
- 20) **Choice D is correct.** (6.NS.C.7d) Although linear, this is not proportional because when  $m = 0$ ,  $c = 50 \neq 0$ . Proportional relationships have no constant term and pass through the origin.
- 21) **Choice D is correct.** (6.EE.C.9) Fixed:  $30\% \times \$1000 = \$300$ . Variable:  $45\% \times \$1000 = \$450$ . Savings:  $25\% \times \$1000 = \$250$ . Variable expenses is the largest.
- 22) **Choice A is correct.** (6.NS.B.2)  $9,504 \div 32 = 297$  exactly. Verify:  $32 \times 297 = 9,504$ .
- 23) **The correct answer is 112.** (6.NS.A.1) 28% of 400 is  $0.28 \times 400 = 112$  students.
- 24) **Choice A is correct.** (6.NS.B.3) Add:  $0.75 + 1.2 + 0.8 + 0.6 = 3.95$  kg.
- 25) **Choice C is correct.** (6.NS.B.4) Factors of 28: 1, 2, 4, 7, 14, 28. Factors of 42: 1, 2, 3, 6, 7, 14, 21, 42. Common factors: 1, 2, 7, 14. GCF is 14.
- 26) **Choice B is correct.** (6.NS.C.5) A negative elevation means below sea level. An elevation of  $-340$  meters means 340 meters below sea level.



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**From Your Math Family**

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**Hi, Math Family Member,**

◇ Welcome to a special note from your math family. You finished 5 full practice tests, and that hard work matters more than any score. We see you. We are proud of you. ◇

★ **Our math family knows:** math is a journey. You have taken many steps already. The test is just one stop. Every skill you built is yours forever. ★

**What Your Math Family Sees**

- **Hard Work:** You keep showing up.
- **Real Growth:** You can do problems today you couldn't before.
- **Brave Heart:** You face hard problems with brave thinking.
- **Bright Future:** Your math journey is just beginning.

**Family tip:** on test day, picture us standing behind you, smiling and rooting for you. You are not alone. Your math family is with you!

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Family

# PRACTICE MORE. ACHIEVE MORE.

This book provides **5 full-length Math practice tests** designed to help Grade 6 students strengthen their skills, build confidence, and excel on standardized assessments.

Each test is carefully crafted to reflect the latest standards and covers a wide range of math topics with realistic questions and detailed answer explanations.



#### BUILD CONFIDENCE

Practice builds familiarity and reduces test anxiety.



#### IMPROVE ACCURACY

Sharpen skills and avoid common mistakes.



#### ACHIEVE SUCCESS

Consistent practice leads to greater results.

## WHAT'S INSIDE?



#### 5 Full-Length Practice Tests

Realistic tests designed to mirror actual exam conditions.



#### Realistic Questions

A variety of question types to strengthen problem-solving skills.



#### Answer Keys & Explanations

Detailed solutions to help students learn and improve.



#### Performance Tracking

Track progress and identify areas that need improvement.



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