

7 New Hampshire NH SAS Grade 7 Math Practice Tests



7 PRINTED TESTS + 2 ONLINE TESTS

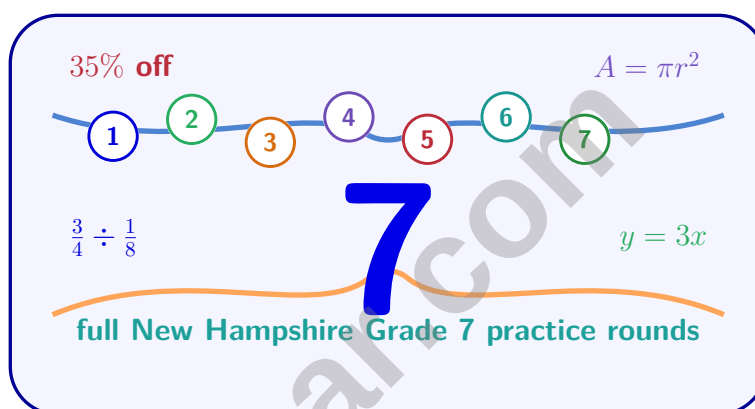


**Standards Aligned Problem Solving
For Comprehensive Assessment Programs**



8 New Hampshire NH SAS Grade 7 Math Practice Tests

Balanced practice across New Hampshire Grade 7 proportions, inequalities, angle relationships, surface area, data, and probability



Eight 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.

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Welcome, New Hampshire Grade 7 Problem Solver!

Eight focused rounds for sharper NH SAS math thinking

This book gives you seven 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

An eight-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?

Eight NH SAS tests, 280 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 7–8	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
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.

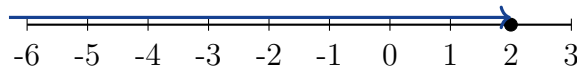


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1) What inequality is represented?



- ☐ A. $x > 2$ ☐ C. $x \geq 2$
☐ B. $x < 2$ ☐ D. $x \leq 2$
- 2) A spinner has 6 equal sections. To simulate rolling a standard die once, how many trials are needed if we spin once per trial?
- ☐ A. 1 trial ☐ C. 6 trials
☐ B. 2 trials ☐ D. 36 trials
- 3) Each burger costs \$4.50. How much will 6 burgers cost?
- ☐ A. \$24.00 ☐ C. \$27.00
☐ B. \$25.50 ☐ D. \$30.00
- 4) A travel agent books a vacation package costing \$2,000 and earns a 5% commission. The client also adds travel insurance for \$150. What is the agent's commission on just the package?
- ☐ A. \$160 ☐ C. \$150
☐ B. \$110 ☐ D. \$100
- 5) Chen invests \$2,500 at 6% annual compound interest. After 2 years, how much interest will he have earned?
- ☐ A. \$300 ☐ C. \$318.60
☐ B. \$612 ☐ D. \$309



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6) What is the opposite of 0?

☐ A. -1

☐ B. 1

☐ C. 0

☐ D. Undefined

7) What is $7 + 9$?

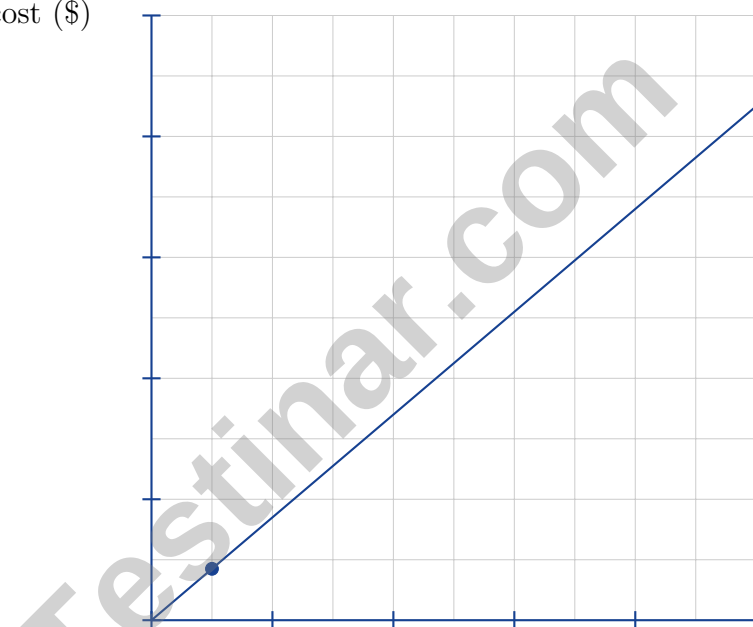
☐ A. 2

☐ B. -2

☐ C. 63

☐ D. 16

Total cost (\$)



Number of items

8)

From this proportional relationship graph, identify the unit-rate point and find the cost per item.



9) Factor: $9m + 12$

☐ A. $3(3m + 4)$

☐ C. $3m(3 + 4)$

☐ B. $9(m + 12)$

☐ D. $12(0.75m + 1)$

10) A square pyramid has base side 9 m and slant height 12 m. What is the total surface area?

☐ A. 81 m^2

☐ C. 297 m^2

☐ B. 216 m^2

☐ D. 378 m^2

11) Which of the following is NOT a like term with $6xy$?

☐ A. $-4xy$

☐ C. $2xy^2$

☐ B. $9yx$

☐ D. $10xy$

12) A jacket on sale costs \$51. The original price was \$60. What percent discount was applied?

13) Sophia's checking account had a balance of \$120. She withdrew \$45 and then deposited \$30. What is her new balance?

☐ A. \$35

☐ C. \$95

☐ B. \$195

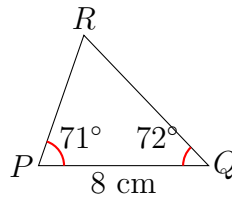
☐ D. \$105



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- 1) A circle has circumference 62.8 inches. What is its radius? Use $\pi \approx 3.14$.
- ☐ A. 5 in ☐ C. 20 in
☐ B. 10 in ☐ D. 40 in
- 2) Two histograms compare the quiz scores of morning and afternoon classes. The morning class shows bars centered around 85–90, while the afternoon class shows bars centered around 75–80. What does this suggest?
- ☐ A. Morning students scored higher on average ☐ C. Both classes performed equally well
☐ B. Afternoon students are smarter ☐ D. Quiz difficulty was higher for morning students
- 3) A patio is composed of two identical trapezoids joined together. Each trapezoid has parallel sides of 4 m and 6 m with height 3 m. What is the total area?
- ☐ A. 15 m² ☐ C. 45 m²
☐ B. 30 m² ☐ D. 60 m²
- 4) A triangular prism has a volume of 240 cm³ and a depth of 10 cm. What is the area of the triangular base?
- ☐ A. 12 cm² ☐ C. 36 cm²
☐ B. 24 cm² ☐ D. 48 cm²





5)

A triangle has angles of 71° and 72° , and the side between them is 8 cm . How many non-congruent triangles can be drawn?

☐ A. 1☐ C. 3☐ B. 2☐ D. Infinitely many

6) If the radius of a circle is 12 units, how many times larger is the diameter than the radius?

☐ A. 1 time☐ C. 3 times☐ B. 2 times☐ D. 4 times

7) Factor: $-4x - 12$

☐ A. $-4(x + 3)$ ☐ C. $-4(x - 3)$ ☐ B. $4(x + 3)$ ☐ D. $-(4x + 12)$

8) A cube has edge length 3 cm . What is its surface area?

☐ A. 9 cm^2 ☐ C. 27 cm^2 ☐ B. 18 cm^2 ☐ D. 54 cm^2

9) Which group shows ALL the like terms in the expression $5a + 3b + 7a + 2c + 8b$?

☐ A. $3b$ and $8b$ ☐ C. $5a$ and $7a$ ☐ B. $2c$ and $5a$ ☐ D. $5a$, $7a$, $3b$, and $8b$ 

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1) Which inequality represents “a number decreased by 10 is less than or equal to 25”?

☐ A. $n - 10 \leq 25$

☐ C. $10 - n \leq 25$

☐ B. $n - 25 \leq 10$

☐ D. $n \leq 35$

2) If $x\%$ of 80 is 16, what is x ?

☐ A. 10

☐ C. 20

☐ B. 16

☐ D. 64

3) The graph of a proportional relationship passes through $(3, 6)$ and the origin. What is the equation?

☐ A. $y = 6x$

☐ C. $y = x + 3$

☐ B. $y = 3x$

☐ D. $y = 2x$

4) A book costs \$15. After a 40% price increase, what is the new cost?

☐ A. \$6

☐ C. \$21

☐ B. \$9

☐ D. \$25

5) A cone is sliced horizontally (parallel to its circular base). What is the shape of the cross-section?

☐ A. Rectangle

☐ C. Circle

☐ B. Triangle

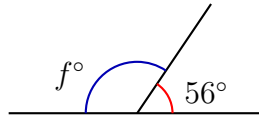
☐ D. Ellipse

6) Evaluate $(2^3)^2$.



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7)



A ray splits a straight angle into two adjacent angles. One angle is marked as 56° . What is angle f ?

☐ A. 34°
☐ C. 90°
☐ B. 56°
☐ D. 124°

8) Two similar triangles have corresponding sides of 6 cm and 9 cm. The smaller triangle has a perimeter of 18 cm. What is the perimeter of the larger triangle?

☐ A. 24 cm

☐ C. 30 cm

☐ B. 27 cm

☐ D. 36 cm

9) A circular track has radius 50 meters. A runner completes 3 laps. Approximately how far does the runner travel? Use $\pi \approx 3.14$.

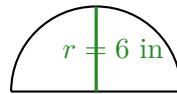
☐ A. 157 m

☐ C. 471 m

☐ B. 314 m

☐ D. 942 m

10)



What is the area of this semicircle? Use $\pi \approx 3.14$.

☐ A. 18.84 in^2
☐ C. 56.52 in^2
☐ B. 37.68 in^2
☐ D. 113.04 in^2


New Hampshire Statewide Assessment System 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 Statewide Assessment System practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.EE.4b) A closed circle at 2 with a left-pointing arrow indicates $x \leq 2$.
- 2) **Choice A is correct.** (7.SP.5-7.SP.8) A spinner with 6 equal sections directly models one roll of a die (one outcome per spin).
- 3) **Choice C is correct.** (7.NS.2) $6 \times 4.50 = 27.00$. Each burger is \$4.50, so 6 burgers cost \$27.00.
- 4) **Choice D is correct.** (7.RP.3) Commission on package = commission rate $\times$ package cost = $0.05 \times 2000 = \$100$. Insurance does not affect the commission calculation on the base package.
- 5) **Choice D is correct.** (7.RP.3) Balance after 2 years: $2500(1.06)^2 = 2809$. Interest earned: $2809 - 2500 = 309$.
- 6) **Choice C is correct.** (7.NS.1-7.NS.3) Zero is its own opposite. The opposite of 0 is 0, since $0 = -0$.
- 7) **Choice D is correct.** (7.NS.1b) Both numbers are positive, so add them directly: $7 + 9 = 16$.
- 8) **The correct answer is 0.85.** (7.RP.1-7.RP.3) The marked point is (1, 0.85), which is the unit-rate point. This means the constant of proportionality is $k = 0.85$, so the cost is \$0.85 per item.
- 9) **Choice A is correct.** (7.EE.1-7.EE.2) The GCF of 9 and 12 is 3. So $9m + 12 = 3(3m + 4)$. (Option B confuses the constant. Option C factors only the variable. Option D uses a decimal.)
- 10) **Choice C is correct.** (7.G.4-7.G.6) Base: $9^2 = 81 \text{ m}^2$. Four triangles: $4 \times \frac{1}{2}(9)(12) = 4 \times 54 = 216 \text{ m}^2$. Total: $81 + 216 = 297 \text{ m}^2$.
- 11) **Choice C is correct.** (7.EE.1) Like terms must have the same variables with the same exponents. $2xy^2$ has x^1y^2 , while $6xy$ has x^1y^1 . The exponents on y differ, so they are not like terms. Options A and D are clearly like $6xy$. Option B, $9yx$, equals $9xy$ by commutativity, so it is also a like term with $6xy$.
- 12) **The correct answer is 15%.** (7.RP.3) The discount amount is $60 - 51 = 9$ dollars. Percent discount: $\frac{9}{60} = 0.15 = 15\%$.
- 13) **Choice D is correct.** (7.NS.1-7.NS.3) $120 - 45 + 30 = 75 + 30 = 105$.
- 14) **Choice C is correct.** (7.NS.1-7.NS.3) Negative divided by negative is positive: $-\frac{7}{8} \times (-\frac{4}{3}) = \frac{28}{24} = \frac{7}{6}$.
- 15) **Choice B is correct.** (7.EE.1-7.EE.2) Substitute: $(3)^2 + 3(3) - 5 = 9 + 9 - 5 = 13$.
- 16) **Choice D is correct.** (7.EE.4a) Option D matches $2x + 7 = 21$: multiply x by 2, add 7. Others do not use the form correctly.
- 17) **Choice B is correct.** (7.EE.4a) Distribute: $-4x + 20 = 4$. Subtract 20: $-4x = -16$. Divide by -4 : $x = 4$.
- 18) **Choice B is correct.** (7.EE.4b) Divide both sides by 4: $x < \frac{20}{4} = 5$.
- 19) **The correct answer is A,C.** (7.RP.1-7.RP.3) True: A ($4 \times 6 = 24$ feet) and C ($2 \times 6 = 12$ feet; $2.5 \times 6 = 15$ feet). False: B (area scales by $6^2 = 36$, not 6); D (area: $900 \div 36 = 25$ sq in, not 36); E (areas are reduced by $\frac{1}{36}$ on the plan, not $\frac{1}{6}$).
- 20) **Choice A is correct.** (7.G.1-7.G.5) A horizontal plane cutting through a frustum produces a circular cross-section. The radius of this circle is between the radii of the upper and lower bases.
- 21) **Choice C is correct.** (7.G.1-7.G.5) Let the complement be x . Then the angle is $x + 18$. So $x + (x + 18) = 90^\circ$, giving $2x = 72^\circ$ and $x = 36^\circ$. Angle is $36 + 18 = 54^\circ$.
- 22) **Choice B is correct.** (7.G.1-7.G.5) Rectangle A: $\frac{9}{6} = \frac{3}{2} = 1.5$. Rectangle B: $\frac{13}{8} = 1.625$. Since $1.5 \neq 1.625$, the rectangles are NOT similar. The student's error is using additive differences (4 inches, 2 inches) instead of checking if the ratios of corresponding sides are equal.
- 23) **Choice B is correct.** (7.SP.1-7.SP.4) Selecting items at regular intervals (every hour) is systematic sampling, a valid method for creating unbiased samples.
- 24) **The correct answer is 60.** (7.RP.3) Calculate $\frac{5}{12} \times 144 = \frac{5 \times 144}{12} = \frac{720}{12} = 60$ books.
- 25) **Choice B is correct.** (7.SP.1-7.SP.4) The intervals 60–65 and 65–70 have frequencies 14 and 16, totaling 30 out of 40 students (75%), so most are in that range.
- 26) **Choice B is correct.** (7.SP.5-7.SP.8) The coin flip is independent of the die roll. $P(\text{tails}) = \frac{1}{2}$.
- 27) **Choice B is correct.** (7.NS.2d) Divide $1 \div 7 = 0.142857142857 \dots$. The block 142857 repeats.



Hi, Momentum Builder!

◇ Finishing a Grade 7 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 7 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 7 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

Practice Today. Succeed Tomorrow!

This book includes **7** 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.



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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
- ✓ 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.



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

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