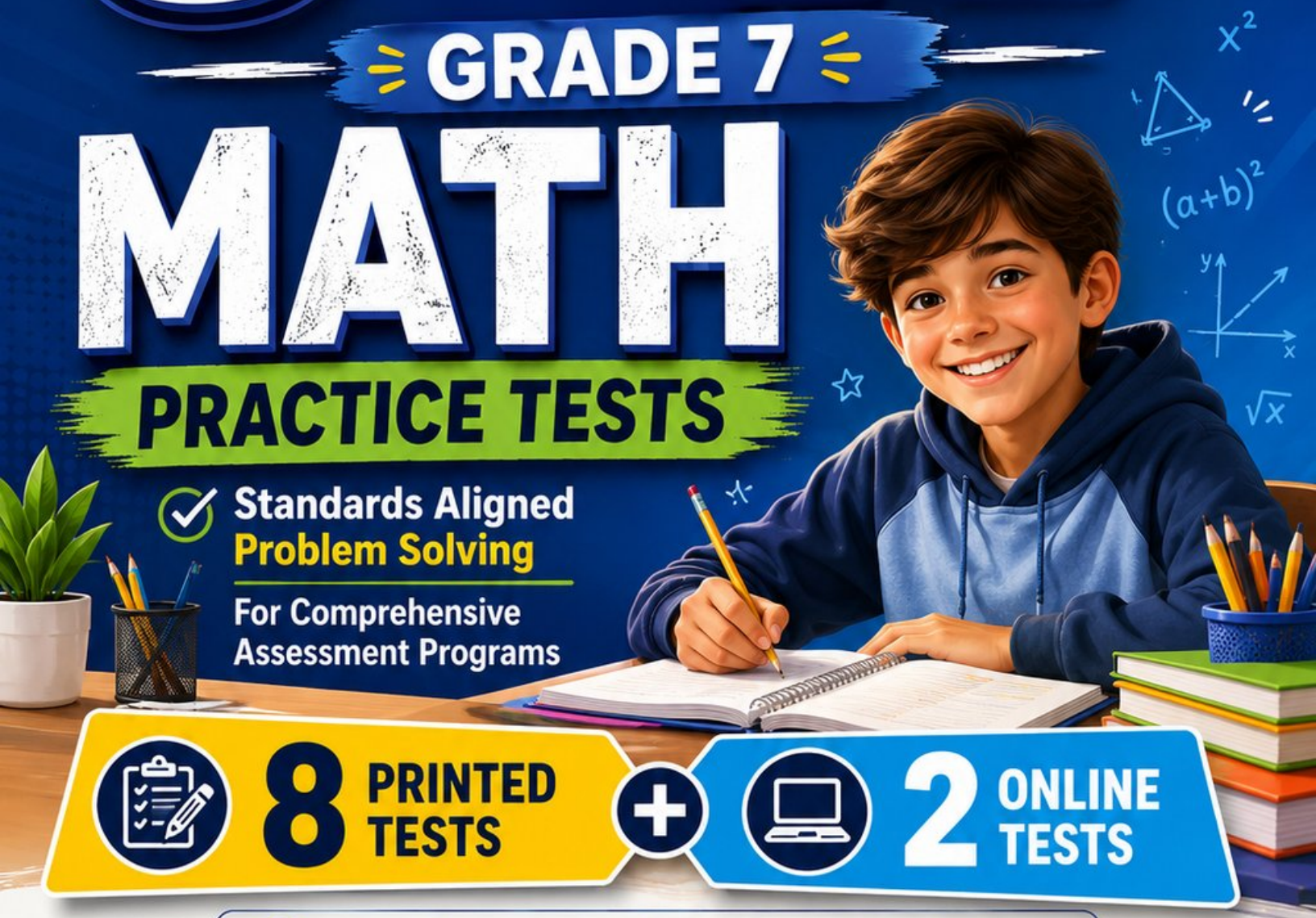
8 New Hampshire NH SAS

GRADE 7

MATH

PRACTICE TESTS



Standards Aligned
Problem Solving

For Comprehensive Assessment Programs

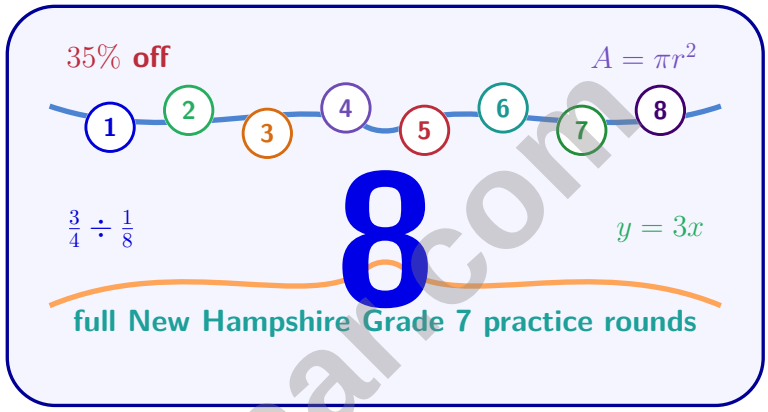
8 PRINTED TESTS + 2 ONLINE TESTS

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

BUILD CONFIDENCE | STRENGTHEN SKILLS | THINK SMARTER | BE TEST-READY

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.

Jay Daie and Reza Nazari

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Welcome, New Hampshire Grade 7 Problem Solver!

Eight focused rounds for sharper NH SAS math thinking

This book gives you eight 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.

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, 320 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.

Table of Contents

1) A map scale is given as 2 in : 5 miles. If the actual distance between two points is 20 miles, what is the distance on the map?

☐ A. 4 in
☐ B. 6 in
☐ C. 8 in
☐ D. 10 in

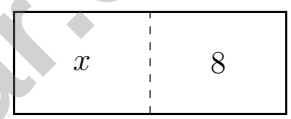
2) Simplify: $(3f + 11) - (f - 2)$

☐ A. $2f + 13$
☐ B. $2f + 9$
☐ C. $4f + 13$
☐ D. $2f - 9$

3) A lawn-care service charges \$35 for the first yard and \$25 for each additional yard. If someone pays \$110, which equation finds y, the total number of yards mowed?

☐ A. $25y + 35 = 110$
☐ B. $35y + 25 = 110$
☐ C. $25(y - 1) + 35 = 110$
☐ D. $25y + 35y = 110$

4)



Multiply each part by 2:

$$2(x + 8) = 2x + 16$$

Which equation is equivalent to $2(x + 8) = 30$?

☐ A. $2x + 8 = 30$
☐ B. $2x + 16 = 30$
☐ C. $x + 16 = 30$
☐ D. $2x = 38$

5) A triangle with vertices at $A(1, 1)$, $B(3, 1)$, and $C(2, 3)$ is translated by the vector $(2, -4)$. What is the image of vertex B after this translation?

☐ A. $(5, -3)$
☐ B. $(3, -4)$
☐ C. $(1, 3)$
☐ D. $(6, 0)$

6) If you earn \$18 per hour and work 35 hours per week, what is your weekly gross pay before taxes?

7) A proportional relationship has the equation $y = 4x$. Which of the following points lies on this line?

☐ A. $(4, 15)$
☐ B. $(2, 6)$
☐ C. $(3, 10)$
☐ D. $(1, 4)$

8) What is the repeating block in $\frac{2}{7}$?

☐ A. $0.\overline{2}$
☐ B. $0.\overline{285714}$
☐ C. $0.2\overline{857}$
☐ D. $0.\overline{28}$

9) A submarine is at -245 meters. It rises 35 meters. What is its new depth?

☐ A. -280 m
☐ B. -210 m
☐ C. 210 m
☐ D. 280 m

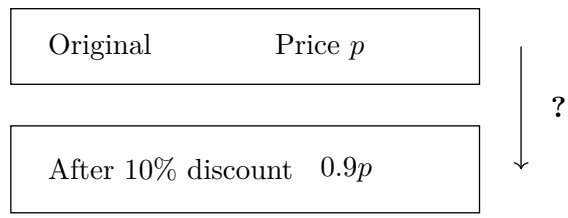
10) A bakery uses $\frac{3}{16}$ pound of butter per cake. How many pounds of butter are needed for 12 cakes?

☐ A. $2\frac{1}{4}$ pounds
☐ B. $\frac{9}{8}$ pounds
☐ C. 3 pounds
☐ D. $\frac{3}{192}$ pounds

11) Express 0.0056 in scientific notation and identify which form is NOT equivalent.

☐ A. 5.6×10^{-3}
☐ B. 56×10^{-4}
☐ C. 0.56×10^{-2}
☐ D. 5.6×10^{-2}

12)



Which expression correctly shows the relationship from the diagram?

☐ A. $0.9p = p - 0.1p$
☐ B. $0.9p = p + 0.1p$
☐ C. $0.9p = 1.1p$
☐ D. $0.9p = 0.1p$

13) Simplify: $(y^2)^6$

☐ A. y^8
☐ B. y^{12}
☐ C. y^{36}
☐ D. $2y^6$

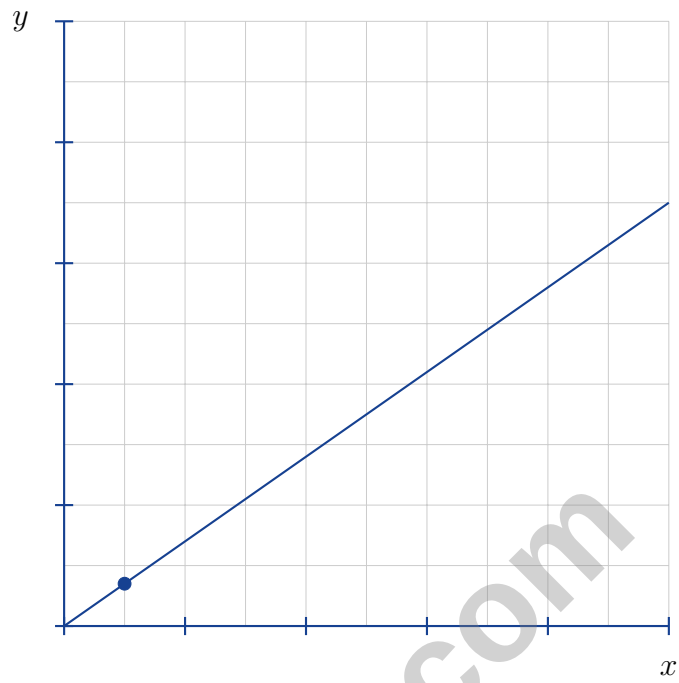
14) Check which solution is correct for $6x + 2 = 26$.

☐ A. $x = 2$
☐ B. $x = 4$
☐ C. $x = 5$
☐ D. $x = 6$

15) Solve $3x + 7 = 22$ and explain why your answer is reasonable.

☐ A. $x = 5$
☐ B. $x = 9.67$
☐ C. $x = 10$
☐ D. $x = 15$

1)



Which equation represents this proportional relationship?

☐ A. $y = 10x$
☐ B. $y = 1.4x$
☐ C. $y = 7x$
☐ D. $y = 0.7x$

2) A manufacturing plant's baseline productivity is 200 items/hour. It increases by 15 items, decreases by 8 items, then increases by 12 items. What is the new rate?

☐ A. 225 items/hour
☐ B. 219 items/hour
☐ C. 207 items/hour
☐ D. 235 items/hour

3) Which expression is equivalent to $12m + 18n$?

☐ A. $6(2m + 3n)$
☐ B. $6(12m + 18n)$
☐ C. $2(6m + 9n)$
☐ D. $12(m + 1.5n)$

4) If $5x + b = 20$ and $x = 2$, what is b?

☐ A. $b = 5$
☐ B. $b = 10$
☐ C. $b = 15$
☐ D. $b = 20$

5) Temperature drops 2 degrees per hour for 6 hours. What is the total change?

☐ A. 4 degrees
☐ B. -4 degrees
☐ C. -12 degrees
☐ D. 12 degrees

6) A histogram shows the weights (in pounds) of 50 dogs. The intervals are 10–20 lbs, 20–30 lbs, 30–40 lbs, and 40–50 lbs, with frequencies 8, 15, 20, and 7. Which interval contains the mode?

☐ A. 10–20 lbs
☐ B. 20–30 lbs
☐ C. 30–40 lbs
☐ D. 40–50 lbs

7) A container holds 25 beads: 10 red, 8 blue, and 7 green. A bead is selected at random. What is the probability of selecting a blue bead?

☐ A. $\frac{8}{25}$
☐ B. $\frac{8}{17}$
☐ C. $\frac{10}{25}$
☐ D. $\frac{7}{25}$

8) An organized list shows all outcomes when drawing one tile from {M, A, T} and one from {1, 2, 3, 4}. How many ordered pairs should the complete list have?

M1, M2, M3, M4, A1, A2, A3, A4, T1, T2, T3, T4

☐ A. 7 pairs
☐ B. 9 pairs
☐ C. 12 pairs
☐ D. 16 pairs

1) A bank account starts with a credit of \$50. After a debit of \$50, what is the account balance?

☐ A. \$100 (adds both amounts instead of subtracting)
☐ B. \$50 (ignores the debit)
☐ C. −\$50 (records only the debit)
☐ D. \$0 (correct; opposites sum to zero)

2) A tetrahedral die has four equal faces labeled $1, 1, 2, 3$. Which is correct?

☐ A. This is a uniform model.
☐ B. $P(1) = \frac{1}{4}$
☐ C. $P(1) = \frac{1}{2}$
☐ D. $P(2) = P(3)$

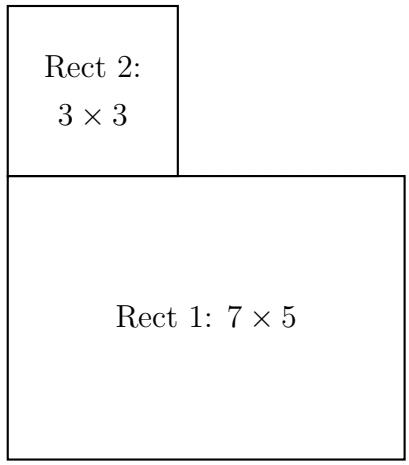
3) Two datasets are displayed in a back-to-back stem-and-leaf plot:

Group A (left) vs. Group B (right)

Group A	Stem	Group B
8, 5, 2	5	3, 6, 9
7, 4	6	1, 5, 8
	7	2, 4, 6

Which group has more data values?

☐ A. Group A
☐ B. Group B
☐ C. Both equal
☐ D. Cannot determine



4)

An L-shaped room consists of a large rectangle (7 m × 5 m) and a small rectangle (3 m × 3 m) attached at a corner. Which equation correctly finds the total area?

☐ A. $7 \times 5 \times 3 \times 3$
☐ B. $(7 + 5) + (3 + 3)$
☐ C. $7 \times 5 + 3 \times 3$
☐ D. $7 + 3 \times 5 + 3$

5) A poster is enlarged to 1.5 times its original size. If the original poster was 20 inches by 30 inches, what is the new area in square inches?

6) Expand: $(3x + 2) \cdot 5$

☐ A. $3x + 10$
☐ B. $15x + 10$
☐ C. $15x + 2$
☐ D. $8x + 5$

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.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice C is correct.** 7.G.1-7.G.5 Set up: $\frac{2 \text{ in}}{5 \text{ miles}} = \frac{x}{20 \text{ miles}}$. Cross-multiply: $5x = 40$, so $x = 8$ in.

2) **Choice A is correct.** 7.EE.1-7.EE.2 Distribute the negative: $3f + 11 - f + 2 = (3f - f) + (11 + 2) = 2f + 13$.

3) **Choice C is correct.** 7.EE.4a First yard is \$35, then \$25 per additional yard. For y total yards: $35 + 25(y - 1) = 110$.

4) **Choice B is correct.** 7.EE.4a The distributive property gives $2 \cdot x + 2 \cdot 8 = 30$, so $2x + 16 = 30$.

5) **Choice A is correct.** 7.G.1-7.G.5 A translation by $(2, -4)$ adds the vector to each point: $(3, 1) + (2, -4) = (5, -3)$.

6) **The correct answer is** \$630 **.** 7.RP.3 Weekly pay: $18 \times 35 = \$630$.

7) **Choice D is correct.** 7.RP.1-7.RP.3 For $y = 4x$: when $x = 1$, $y = 4 \times 1 = 4$. So $(1, 4)$ lies on the line. This is the unit-rate point where the constant of proportionality $k = 4$ is visually represented. The other points do not satisfy $y = 4x$.

8) **Choice B is correct.** 7.NS.2d Divide $2 \div 7 = 0.285714285714\ldots$ The full repeating block is 285714, same as $\frac{1}{7}$ but shifted.

9) **Choice B is correct.** 7.NS.1-7.NS.3 $-245 + 35 = -210$ meters.

10) **Choice A is correct.** 7.NS.1-7.NS.3 Total butter $= 12 \times \frac{3}{16} = \frac{36}{16} = \frac{9}{4} = 2\frac{1}{4}$ pounds.

11) **Choice D is correct.** 7.NS.1-7.NS.3 $0.0056 = 5.6 \times 10^{-3}$ (proper form). Check: $56 \times 10^{-4} = 5.6 \times 10^{-3}$ (equiv.), $0.56 \times 10^{-2} = 5.6 \times 10^{-3}$ (equiv.), but $5.6 \times 10^{-2} = 0.056 \neq 0.0056$.

12) **Choice A is correct.** 7.EE.1-7.EE.2 The diagram shows a discount reduces price from p to $0.9p$. This means $0.9p = p - 0.1p$, factoring as $p(1 - 0.1)$.

13) **Choice B is correct.** 7.EE.1-7.EE.2 When raising a power to a power, multiply the exponents: $(y^2)^6 = y^{2 \times 6} = y^{12}$.

14) **Choice B is correct.** 7.EE.3-7.EE.4 Substitute $x = 4$: $6(4) + 2 = 24 + 2 = 26$ ✓. Subtract 2: $6x = 24$, divide by 6: $x = 4$.

15) **Choice A is correct.** 7.EE.3-7.EE.4 Subtract 7: $3x = 15$. Divide by 3: $x = 5$. Check: $3(5) + 7 = 15 + 7 = 22$ ✓. Reasonable: three times 5 is 15; add 7 gives 22.

16) **Choice A is correct.** 7.SP.3 The New Method has a higher median (78 vs. 75), suggesting better average performance. However, its larger range (35 vs. 25) indicates less consistency. Trade-off: higher average but more variability.

17) **The correct answer is** 83.3% **.** 7.RP.3 Percentage $= (\$2{,}500 \div \$3{,}000) \times 100\% \approx 0.8333 \times 100\% \approx 83.3\%$.

18) **The correct answer is A,D.** 7.NS.1-7.NS.3 Statement A is true: the opposite of -5 is 5 (positive). Statement D is true: -5 and 5 are each 5 units from zero. Statement B is false because opposites have the same absolute value. Statement C is false: $5 + (-5) = 0$, not 10.

19) **Choice B is correct.** 7.SP.5-7.SP.8 Two of the five equal sections are labeled 1, so $P(1) = \frac{2}{5} = 0.4$.

20) **Choice B is correct.** 7.NS.2 $3 \times 0.5 = 1.5$. Positive times positive is positive.

21) **The correct answer is** \$7.35 **.** 7.RP.3 Simple: $1500 \times 0.07 \times 2 = 210$. Compound: $1500(1.07)^2 = 1717.35$; interest $= 217.35$. Difference: $217.35 - 210 = 7.35$.

22) **Choice D is correct.** 7.RP.3 Sales tax $= 0.09 \times 150 = \$13.50$. Final cost $= 150 + 13.50 = \$163.50$.

23) **Choice A is correct.** 7.G.4-7.G.6 Add the two rectangles, but subtract the overlap once (since it was counted twice). Vertical rectangle: $4 \times 10 = 40$ m^2. Horizontal rectangle: $6 \times 4 = 24$ m^2. Overlap region: $4 \times 4 = 16$ m^2. Total: $40 + 24 - 16 = 48$ m^2.

24) **Choice C is correct.** 7.RP.1-7.RP.3 Ratio 5 : 3 means $5x + 3x = 64$, so $8x = 64$ and $x = 8$. Vegetables area $= 5x = 5 \times 8 = 40$ m^2.

25) **Choice A is correct.** 7.G.4-7.G.6 Original volume $= 3 \times 4 \times 6 = 72$ cm^3. When all dimensions are halved, volume is divided by $2^3 = 8$. Smaller prism volume $= 72/8 = 9$ cm^3.

26) **Choice A is correct.** 7.G.1-7.G.5 Triangle Inequality requires strict inequalities: $|5.1 - 3.2| < c < 5.1 + 3.2$, so $1.9 < c < 8.3$.

27) **Choice C is correct.** 7.G.1-7.G.5 With one side and one angle, we have insufficient information. Adding a second side gives SAS; adding a second angle gives ASA. Either approach uniquely determines the triangle.

28) **Choice C is correct.** 7.G.4-7.G.6 In the same circle, sector area is proportional to central angle. Since $80° = 2 \times 40°$, Sector Y is twice as large as Sector X.

Hi, Calm Solver!

◇ This wide-ranging book gave you eight serious Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. A calm mind can see choices more clearly. That matters in Grade 7, where one problem may have several possible entry points. ◇

⋆ **Remember this:** You practiced building calm by doing full tests. Each completed page is rehearsal for staying steady when the real test feels serious. ⋆

Calm-Test Moves

- **Pause:** Give your brain one quiet second.
- **Choose:** Pick the first useful step.
- **Continue:** Do not demand perfection immediately.
- **Check:** Use review time wisely.

Grade 7 test-day tip: If you feel rushed, slow your reading for one sentence. Clear reading saves time.

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

Jay Daie
Your Calm-Test Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** 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:

- **8** Full-Length Printed Tests
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- Detailed Answer Explanations

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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.

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Familiarize with test formats and improve accuracy and speed.

Achieve Success
Build confidence and perform your best on test day.

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- Measurement & Conversions
- Algebraic Thinking
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