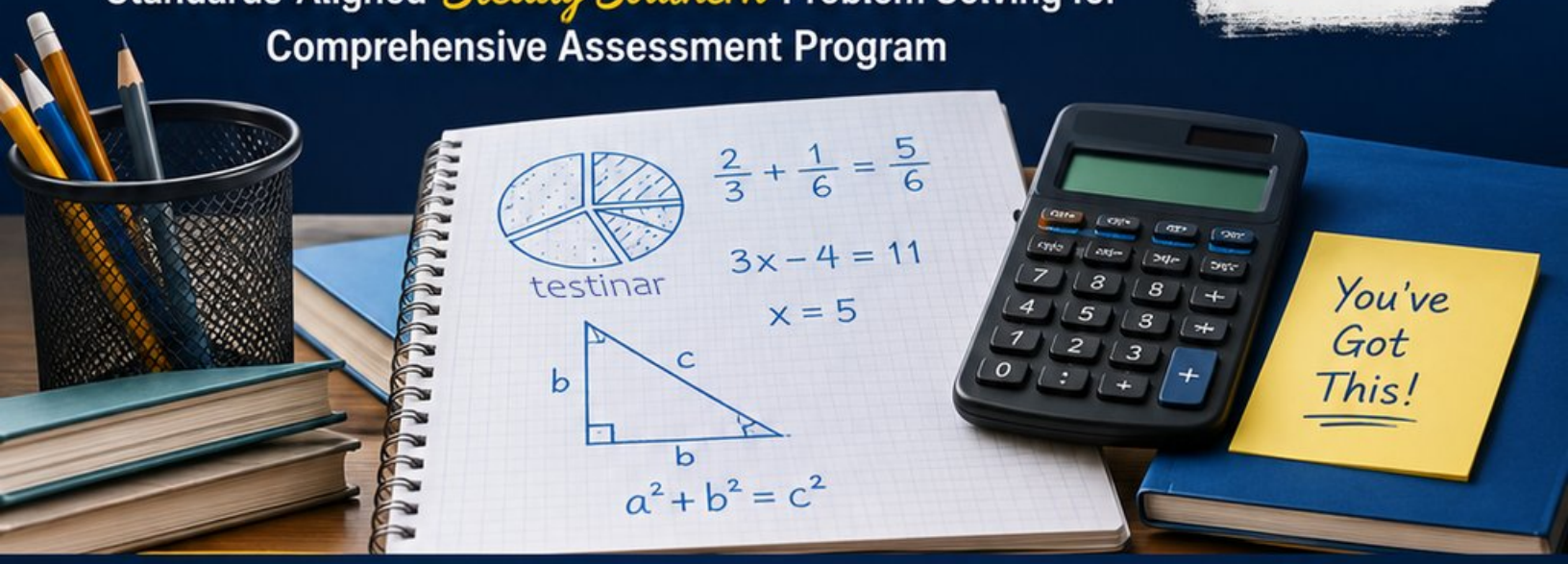
8 North Carolina EOG

8 PRINTED TESTS + 2 ONLINE TESTS

GRADE 6 MATH PRACTICE TESTS

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

Standards-Aligned *Steady Southern* Problem Solving for Comprehensive Assessment Program



BUILT FOR ACAP SUCCESS

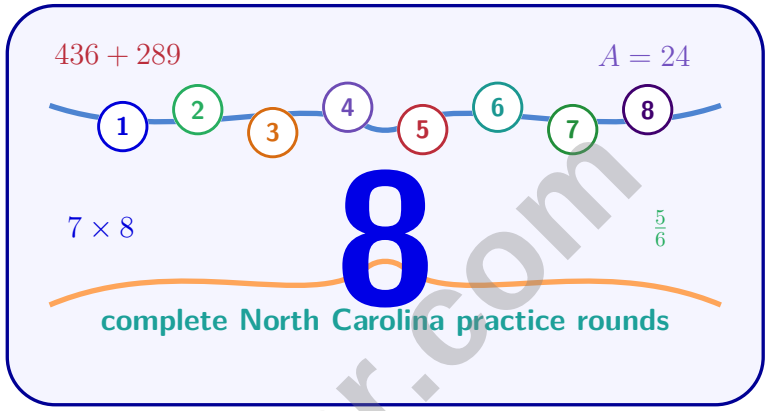
REALISTIC TESTS & QUESTION TYPES

STRENGTHEN MATH SKILLS

REVIEW, PRACTICE, AND IMPROVE

8 North Carolina EOG Grade 6 Math Practice Tests

Standards-Aligned Mountain-To-Coast Math Practice for End-of-Grade Tests



Eight complete 40-question Grade 6 practice rounds for EOG, built for mountain-to-coast math practice 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, North Carolina Math Explorer!

Eight focused rounds using mountain-to-coast math practice

This book gives you eight full Grade 6 practice tests for EOG. Each round uses Blue Ridge paths, city streets, and coastal routes as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

Your North Carolina Practice Promise

Travel from clue to answer: identify the task, model the math, and check the units.

How to Use This Book

A eight-session routine for mountain-to-coast math practice

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

North Carolina review rhythm: Finish a round, review the route, and use corrections to prepare for the next test.

What Is Inside?

Eight EOG tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–3	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 4–6	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Tests 7–8	Final stamina rounds for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

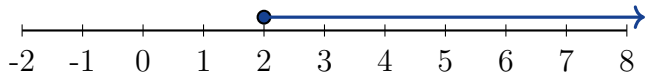
The tests are mixed on purpose. Mountain-to-coast math practice means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.

Table of Contents

1) A student mistakenly writes $s = 25t$ to represent "the total cost t is \$25 per shirt s". What is the error?

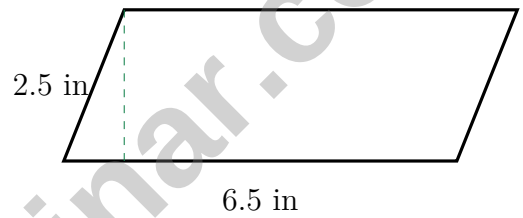
☐ A. The variables are swapped
☐ B. The number 25 is incorrect
☐ C. The equation should use addition
☐ D. There is no error

2) Which number line represents $x \geq 2$?



☐ A. Closed circle at 2, arrow left
☐ B. Open circle at 2, arrow right
☐ C. Closed circle at 2, arrow right
☐ D. Open circle at 2, arrow left

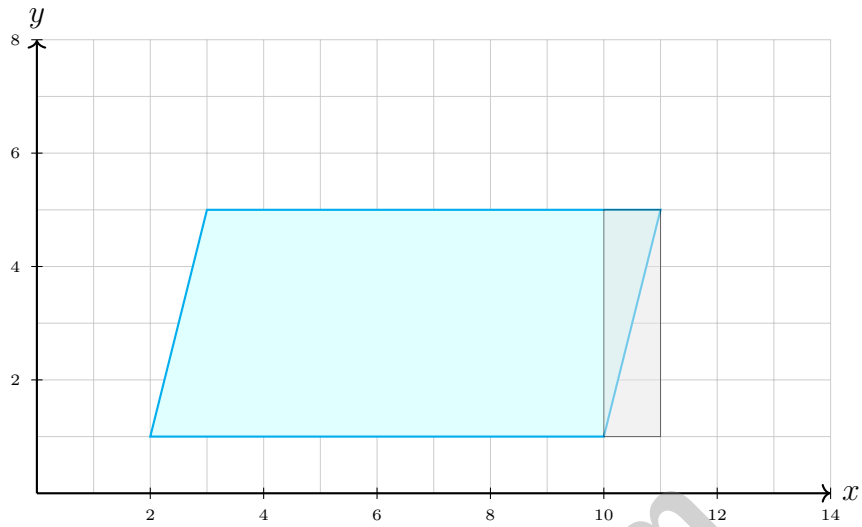
3)



A parallelogram has a base of 6.5 inches and a height of 2.5 inches. What is the area?

☐ A. 9 in^2
☐ B. 16.25 in^2
☐ C. 18 in^2
☐ D. 9.5 in^2

4)



A trapezoid has parallel sides (bases) of 8 units and 8 units, with a height of 4 units. What is its area?

☐ A. 28 square units
☐ B. 32 square units
☐ C. 36 square units
☐ D. 40 square units

5) A rectangular prism has length 10 cm, width 6 cm, and height 4 cm. If you double all dimensions, the new surface area will be how many times the original?

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

6) Evaluate: $3^2 \times 2 - 4$

☐ A. 14
☐ B. 18
☐ C. 32
☐ D. 50

7) Write an expression for "8 less than twice a number d".

☐ A. $2d - 8$
☐ B. $2(d - 8)$
☐ C. $2 - d - 8$
☐ D. $8 - 2d$

8) In the expression $a + 2a + 3a$, how many terms are shown before combining like terms?

☐ A. 1
☐ B. 2
☐ C. 3
☐ D. 6

9) Which table shows correct values for the expression $y = 2x - 1$?

	$x = 1$	$x = 2$	$x = 3$	$x = 4$
A:	0	3	5	7
B:	1	3	5	7
C:	2	4	6	8
D:	3	5	7	9

10) Solve for x: $\frac{x}{4} = 8$.

1) Solve for x: $0.5x = 7$

☐ A. $x = 3.5$
☐ B. $x = 6.5$
☐ C. $x = 7.5$
☐ D. $x = 14$

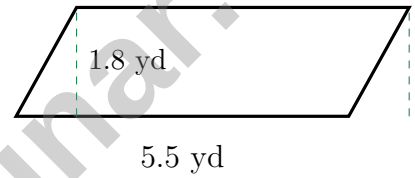
2) A back-to-back stem-and-leaf plot shows:

Class A	Stem	Class B
9, 7, 5	6	1, 3, 4
8, 6, 2	7	0, 5, 7, 9

What is the range for Class A?

☐ A. 13
☐ B. 20
☐ C. 22
☐ D. 25

3)

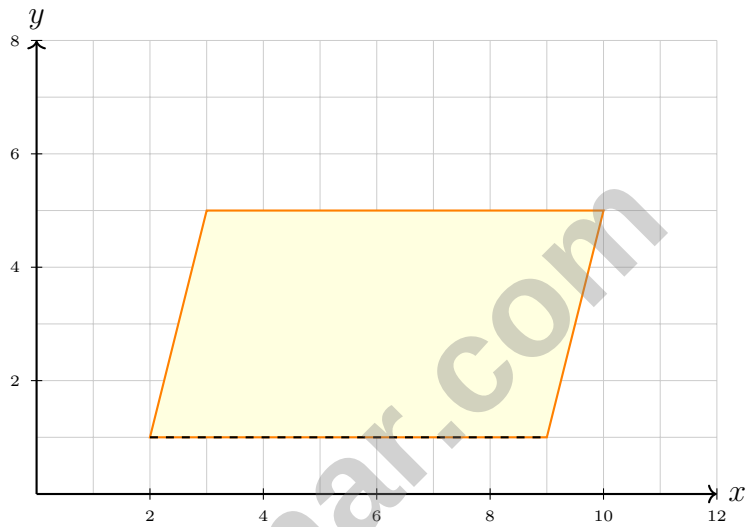


This parallelogram has a base of 5.5 yards and a perpendicular height of 1.8 yards. What is the area?

☐ A. 7.3 yd^2
☐ B. 9.9 yd^2
☐ C. 14.6 yd^2
☐ D. 3.6 yd^2

4) A histogram has frequencies $8, 14, 11, 7$. What percent are in the two middle intervals?

5)



A parallelogram has vertices at $(2, 1)$, $(9, 1)$, $(10, 5)$, and $(3, 5)$. If the base is 7 units and the height is 4 units, what is the area?

☐ A. 20 square units
☐ B. 24 square units
☐ C. 28 square units
☐ D. 32 square units

1) Sarah's daily allowance for 4 days was \$8, \$10, \$6, \$12. What is her mean daily allowance?

☐ A. \$9
☐ B. \$9.50
☐ C. \$10
☐ D. \$8

2) A trapezoid has bases of 10 cm and 6 cm. If the area is 32 cm^2, what is the height?

☐ A. 2 cm
☐ B. 3.2 cm
☐ C. 4 cm
☐ D. 8 cm

3) If a diver is at -45 feet relative to sea level, what is $|-45|$?

☐ A. -45 feet
☐ B. 90 feet
☐ C. 0 feet
☐ D. 45 feet

4) Evaluate: 5^3

☐ A. 15
☐ B. 25
☐ C. 125
☐ D. 243

5) Which expression correctly translates "the quotient of the sum of a and b and 2"?

☐ A. $a + \frac{b}{2}$
☐ B. $\frac{a}{2} + b$
☐ C. $\frac{a+b}{2}$
☐ D. $2(a+b)$

6) Evaluate $\frac{12}{y} + 2$ when $y = 3$.

☐ A. 2
☐ B. 4
☐ C. 6
☐ D. 8

7) In the expression $4x - 7$, what does the variable x represent if the expression models "four times a number minus seven"?

☐ A. Four
☐ B. Seven
☐ C. The unknown number
☐ D. The result

8) What is the volume of a rectangular prism with length 6 in, width 4 in, and height 2 in?

☐ A. 12 in^3
☐ B. 24 in^3
☐ C. 36 in^3
☐ D. 48 in^3

9) A sports analyst wants to study the heights of basketball players in a league. She measures 12 players. What is the population?

☐ A. The 12 players she measured
☐ B. The height measurements she recorded
☐ C. All people who play sports
☐ D. All basketball players in the league

10) A histogram shows weights of 20 students. The shape is roughly symmetric. Which summary best describes the center?

☐ A. The mean, because symmetric data has mean ≈ median.
☐ B. The median, because it is resistant to outliers.
☐ C. The mode, because it is the most common value.
☐ D. The range, because it spans the entire data.

11) A water fountain fills 54 cups in 9 minutes. What is the rate in cups per minute?

☐ A. 5 cups per minute
☐ B. 63 cups per minute
☐ C. 45 cups per minute
☐ D. 6 cups per minute

North Carolina EOG Practice Test Answer Keys

How to use this North Carolina EOG 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 mountain-to-coast math practice
3. rework the problem before reading the full explanation, using this reminder: Travel from clue to answer: identify the task, model the math, and check the units.

A calm North Carolina correction routine turns every missed item into useful practice. Finish a round, review the route, and use corrections to prepare for the next test.

North Carolina Practice Test Answers and Explanations

Review the eight printed EOG tests with balanced, careful, and ready for the next route habits.

Practice Test 1 Answers and Explanations

1) **Choice A is correct.** NC.6.SP.1 The total cost should equal the price per shirt times the number of shirts: $t = 25s$. Writing $s = 25t$ swaps the dependent and independent variables.
2) **Choice C is correct.** NC.6.NS.6 $x \geq 2$ includes 2 (closed circle) and all numbers greater than 2 (arrow points right).
3) **Choice B is correct.** NC.6.EE.3 Area $= 6.5 \times 2.5 = 16.25$ in^2.
4) **Choice B is correct.** NC.6.G.3 Area of a trapezoid $= \frac{1}{2}(b_1 + b_2) \times h = \frac{1}{2}(8 + 8) \times 4 = \frac{1}{2} \times 16 \times 4 = 32$ square units.
5) **Choice D is correct.** NC.6.G.4 Original $SA = 2(10)(6) + 2(10)(4) + 2(6)(4) = 248$ cm^2. New dimensions $20 \times 12 \times 8$: new $SA = 2(20)(12) + 2(20)(8) + 2(12)(8) = 992$ cm^2 $= 4 \times 248$. When all linear dimensions double, surface area multiplies by $2^2 = 4$.
6) **Choice A is correct.** NC.6.EE.1 Exponent first: $3^2 = 9$. Then multiply: $9 \times 2 = 18$. Finally subtract: $18 - 4 = 14$.
7) **Choice A is correct.** NC.6.EE.6 "Twice a number d" is $2d$. "8 less than $2d$" means subtract 8 from $2d$: $2d - 8$.
8) **Choice C is correct.** NC.6.EE.4 Before combining, we count three separate terms: a, $2a$, and $3a$. After combining, they equal $6a$.
9) **Choice B is correct.** NC.6.EE.3 For each x value: $x = 1 \rightarrow 2(1) - 1 = 1$; $x = 2 \rightarrow 2(2) - 1 = 3$; $x = 3 \rightarrow 2(3) - 1 = 5$; $x = 4 \rightarrow 2(4) - 1 = 7$. Option B is correct.
10) **The correct answer is 32.** NC.6.EE.5 Multiply both sides by 4: $x = 8 \times 4 = 32$. The inverse of dividing by 4 is multiplying by 4.
11) **Choice D is correct.** NC.6.NS.8 The quadrilateral has one pair of parallel sides (top and bottom are parallel). This makes it a trapezoid.
12) **The correct answer is 0.75.** NC.6.EE.8 $3 \div 4 = 0.75$.
13) **Choice A is correct.** NC.6.G.3 Translate: $(0, 1) \rightarrow (0 + 3, 1 + 2) = (3, 3)$.
14) **Choice D is correct.** NC.6.SP.2 A statistical question expects different answers from different people (variability) and requires collecting data. The frequency of asking, topic, or tools used are not defining features.
15) **Choice D is correct.** NC.6.SP.2 Set D has a large outlier (50) that increases the mean to $\frac{60}{5} = 12$. The other sets have means of 3, 5, and 4 respectively.
16) **Choice D is correct.** NC.6.SP.3 Median is 62 (middle of 7 values). Lower half: $56, 58, 60$. Q1 is the median of the lower half, which is 58.
17) **Choice D is correct.** NC.6.NS.4 Quiz 1 IQR $= 88 - 75 = 13$. Quiz 2 IQR $= 85 - 78 = 7$. A smaller IQR means less variability in the middle 50%, so Quiz 2 was more consistent.
18) **Choice C is correct.** NC.6.SP.5 Median of 7 values = 4th value = 1350 (unaffected by \$3000). Mean $= (1200 + 1250 + 1300 + 1350 + 1400 + 1450 + 3000)/7 = 2193$, pulled up significantly. Range $= 3000 - 1200 = 1800$, expanded. Std Dev also increases. Median alone is robust.
19) **Choice B is correct.** NC.6.SP.4 The slope (rise) between months 4 and 5 is $3.1 - 2.8 = 0.3$, the smallest growth. Other intervals show larger increases: 0→1 is 0.7, 5→6 is 0.4, 6→7 is 0.4.
20) **Choice D is correct.** NC.6.RP.3 Count the counters by color: 3 orange and 4 green. Since the question asks orange to green, write $\frac{3}{4}$.
21) **The correct answer is A (distance: $|4 - 0| = 4$) and B (distance: $|7 - 3| = 4$).** NC.6.NS.8 A has horizontal distance $|4 - 0| = 4$, and B has vertical distance $|7 - 3| = 4$. Choices C, D, and E have distances 3, 5, and 5 units.
22) **Choice A is correct.** NC.6.RP.1 Simplify each ratio: Student A has $4 : 6 = 2 : 3$, Student B has $10 : 15 = 2 : 3$, and Student C has $8 : 10 = 4 : 5$. Only A and B match.
23) **Choice D is correct.** NC.6.RP.3 Multiply the monthly rate by 12 months: $35 \times 12 = 420$ dollars per year.

Author's Note

Math Explorer's Note

Hi, Brave Explorer!

◇ What a trip! You explored 8 full tests. You went to many math places: multiplication, fractions, area, time, and more. ◇

⋆ **Smart explorers know:** every trip teaches something. Through 8 tests, you learned a lot. You are a stronger math explorer now. ⋆

Your Explorer Tools

- **Map Reading:** You read problems carefully.
- **Trail Skills:** You take steps in the right order.
- **Backpack:** You have many math tools.
- **Brave Heart:** You explore even hard problems.

Explorer tip: on test day, use the tools you packed. You have the skills. You are ready!

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

Jay Daie

Your Math Trail Guide

MASTER MATH. ACE YOUR TESTS.

This Grade 6 Math Practice Tests book is designed to help students build confidence, strengthen math skills, and excel on comprehensive assessments.

With 8 full-length printed tests and 2 online tests, this resource provides realistic practice, a variety of question types, and detailed answer explanations to help students achieve their best.

Perfect for classroom use, homework, test preparation, and extra practice at home.

8 PRINTED TESTS

+

2 ONLINE TESTS

PERFECT FOR

- Classroom Practice
- Homework & Review
- Independent Learning
- Test Preparation
- Skill Reinforcement
- Building Confidence

PRACTICE TODAY. SUCCEED TOMORROW.

WHAT STUDENTS WILL GAIN

Stronger Math Skills
Build a solid foundation through targeted practice and review.

Better Problem Solving
Develop logical thinking and effective solution strategies.

Understand Key Concepts
Reinforce important math ideas aligned with standards.

Test Confidence
Get familiar with test formats and improve accuracy.

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

TOPICS COVERED

- Ratios & Rates
- The Number System
- Expressions & Equations
- Geometry
- Fractions & Decimals
- Percents
- Statistics & Probability
- Data Analysis
- Measurement & Conversions
- And More!

2 ONLINE TESTS

Extra online practice to reinforce learning and build confidence.

MORE PRACTICE. GREATER RESULTS.

Give your child the tools needed to develop strong math skills, confidence, and a positive attitude toward learning.

8 FULL-LENGTH PRACTICE TESTS

2 ONLINE PRACTICE TESTS

DETAILED ANSWER EXPLANATIONS