

GRADE

6

MATH

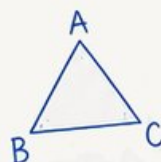
6

# North Carolina EOG

## PRACTICE TESTS

Standards-Aligned  
Steady Southern  
Problem Solving for  
Comprehensive  
Assessment Program

$$2x + 3 = 11$$



$$7^2 = 49$$

BUILD SKILLS.  
GAIN CONFIDENCE.  
**SUCCEED!**



### 6 PRINTED TESTS

Realistic practice to build confidence and mastery



### 2 ONLINE TESTS

Extra practice for continued success



### DETAILED ANSWER EXPLANATIONS

Learn with step-by-step solutions



### FOCUSED & EFFECTIVE

Target key math skills with purposeful practice



### 6 PRINTED TESTS + 2 ONLINE TESTS

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



### PRACTICE

Sharpen skills with targeted practice tests



### REVIEW

Understand concepts and strengthen skills



### SUCCEED

Build confidence and achieve your best

# 6 North Carolina EOG Grade 6 Math Practice Tests

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



Six 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**



# Copyright ©

## Testinar Inc



Published by Testinar Inc

[Testinar.com](http://Testinar.com)

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



*Copyright ©*

# Welcome, North Carolina Math Explorer!

Eight focused rounds using mountain-to-coast math practice

This book gives you six 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.

Read

Plan

Check

## How to Use This Book

A six-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 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–5	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 6	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. Mountain-to-coast math practice means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!  
For more practice  
& answers

# Table of Contents

★ Practice Test 1	_____	13
★ Practice Test 2	_____	28
★ Practice Test 3	_____	42
★ Practice Test 4	_____	59
★ Practice Test 5	_____	75
★ Practice Test 6	_____	90
<b>Practice Test Answer Keys</b>	_____	<b>107</b>
<b>Practice Test Answers and Explanations</b>	_____	<b>111</b>

1) Emma scored 28 out of 35 points on a quiz. What percent did she score?

- A. 75%                       C. 85%  
 B. 80%                       D. 90%

2)

Notebooks Purchased	Total Cost (\$)
3	12
5	20
8	$k$

Use the table to find the cost per notebook and calculate the value of  $k$  when 8 notebooks are purchased.

3) A swimming pool must have a temperature greater than 78 degrees Fahrenheit. Which inequality matches this requirement for temperature  $t$ ?

- A.  $t \leq 78$                        C.  $t > 78$   
 B.  $t = 78$                        D.  $t < 78$

4) A coffee shop sells hot drinks only when the temperature is below 75°F. Which inequality represents when hot drinks are sold?

- A.  $T > 75$                        C.  $T \geq 75$   
 B.  $T < 75$                        D.  $T \leq 75$



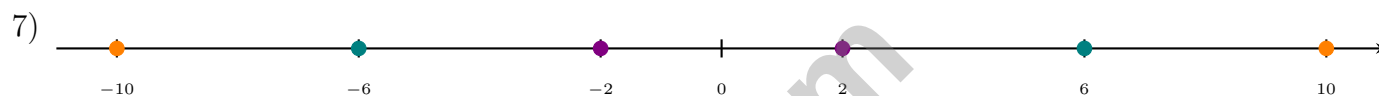
Scan me!  
For more practice  
& answers

5) A student solved  $\frac{4}{9} \div \frac{2}{9}$  and got  $\frac{8}{81}$ . What was the error?

- A. Did not invert the second fraction
- B. Inverted the wrong fraction
- C. Added instead of multiplied after inverting
- D. Did not simplify the final answer

6) What is the GCF of 18 and 24?

- A. 2
- B. 3
- C. 6
- D. 12



On this number line, mark which pairs have the same absolute value.

- A. -10 and 10; -6 and 6; -2 and 2
- B. Only -2 and 2
- C. Only -6 and 6
- D. Only -10 and 10

8) What is the relationship between the points (5, 3) and (5, -3)?

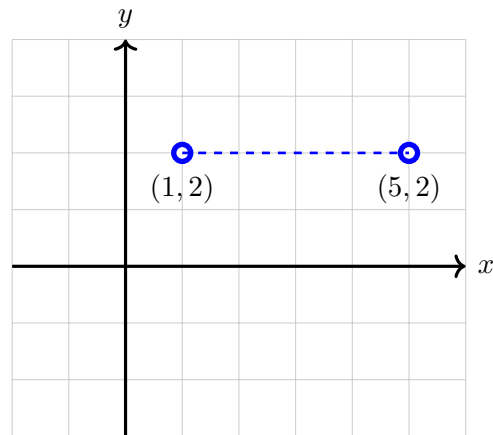
- A. They are reflections across the  $y$ -axis
- B. They are in the same quadrant
- C. They are the same point
- D. They are reflections across the  $x$ -axis

Location	Elevation (m)
Valley	-50
Beach	0
Mountain	800
Canyon	-120

9)

Which location is lowest?

- A. Valley
- B. Beach
- C. Mountain
- D. Canyon



10)

What is the distance between  $(1, 2)$  and  $(5, 2)$ ?

- A. 3 units                       C. 5 units  
 B. 6 units                       D. 4 units

11) If  $a = -10$  and  $b = 7$ , what is  $a + b - (-3)$ ?

- A. 0                                       C. 6  
 B. -6                                       D. -20

12)

Evaluate:  $\boxed{(4 + 1)}^2 \times 2$   
 (Note: A red arrow points to the parentheses with the text "Parentheses first")

What is the value after Step 1 (parentheses)?

- A.  $5^2 \times 2$                        C.  $5 + 1 \times 2$   
 B.  $4 \times 1 \times 2$                        D.  $16 \times 2$



Scan me!  
For more practice  
& answers

1) Rewrite  $3(4 + 5) + 2(4 + 5)$  by **factoring out**  $(4 + 5)$  as one product (one pair of grouped factors multiplying).

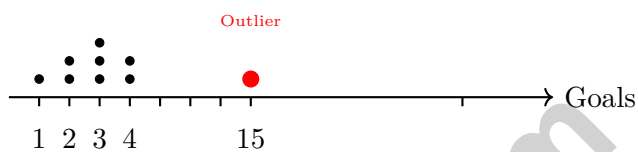
A.  $(3 + 2)(4 + 5)$

C.  $5(14)$

B.  $3 \cdot 4 + 3 \cdot 5 + 2 \cdot 4 + 2 \cdot 5$

D.  $(3 \times 4) + (2 \times 5)$

2) A dot plot shows goal counts: 1, 2, 2, 3, 3, 3, 4, 4, 15.



Which measure best describes the typical goal count (excluding the outlier)?

 A. Mean

 C. Mode

 B. Median

 D. Range

3) Four students calculated the MAD for the same data set: 2, 4, 6, 8 with mean = 5.

Who calculated correctly?

- Anna: distances are 3, 1, 1, 3;  $MAD = 8/5 = 1.6$

- Ben: distances are 3, 1, 1, 3;  $MAD = 8/3 = 2.67$

- Carla: distances are  $-3, -1, 1, 3$ ;  $MAD = 0/4 = 0$

- Diego: distances are 3, 1, 1, 3;  $MAD = (3 + 1 + 1 + 3)/4 = 2$

 A. Anna

 C. Carla

 B. Ben

 D. Diego


- 4) A student reads a box plot and says: “The median is 22, so 22 is in the middle of the data.” Which best describes the error?
- A. The median is not in the middle of the data.
- B. The median is a data value that separates the lower half from the upper half, not necessarily the center of the spread.
- C. The median is always the average of two numbers.
- D. The median cannot be determined from a box plot.
- 5) Create a stem-and-leaf plot from the data: 34, 38, 42, 45, 41, 39, 44. Which statement is true?
- A. Stem 3 has 2 leaves
- B. Stem 4 has 3 leaves
- C. The minimum is 34
- D. All of the above
- 6) A histogram shows test scores with intervals: 60–69 (frequency 3), 70–79 (frequency 8), 80–89 (frequency 6), 90–99 (frequency 2).  
What is the total number of students who took the test?
- A. 17
- B. 19
- C. 21
- D. 24
- 7) A plumber has a pipe that is 2 yards 6 inches long. How many inches total is this? (Use 1 yard = 36 inches.)
- A. 36 inches
- B. 54 inches
- C. 72 inches
- D. 78 inches



Scan me!  
For more practice  
& answers



Makes Misses

1)

A basketball player makes free throws and misses free throws in a ratio of 9 : 1. If the player makes 27 free throws, how many does she miss?

- A. 36 misses                       C. 18 misses  
 B. 9 misses                         D. 3 misses

2) A student reads 156 pages in 6 days. At this rate, how many pages does the student read per day?

- A. 24 pages/day                       C. 30 pages/day  
 B. 26 pages/day                       D. 36 pages/day

3) A bakery produces cookies and brownies in a 6 : 4 ratio. If they produce 18 cookies, how many brownies do they produce?

Cookies	Brownies
6	4
12	8
18	?

- A. 10                                       C. 14  
 B. 16                                       D. 12





## 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.**



Scan me!  
For more practice  
& answers

## North Carolina Practice Test Answers and Explanations

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

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(NC.6.RP.3)**  $\frac{28}{35} = \frac{4}{5} = 0.80 = 80\%$ .
- 2) **The correct answer is 32.** **(NC.6.EE.6)** Cost per notebook =  $\$12 \div 3 = \$4$ . For 8 notebooks:  $k = 8 \times 4 = 32$  dollars.
- 3) **Choice C is correct.** **(NC.6.EE.8)** “Greater than” means strictly more, not equal:  $t > 78$ . This excludes 78 itself.
- 4) **Choice B is correct.** **(NC.6.NS.6)** “Below 75” means strictly less than, not including 75. The inequality is  $T < 75$ .
- 5) **Choice A is correct.** **(NC.6.NS.2)** The correct answer is  $\frac{4}{9} \times \frac{9}{2} = \frac{36}{18} = 2$ . The student calculated  $\frac{4}{9} \times \frac{2}{9} = \frac{8}{81}$ .
- 6) **Choice C is correct.** **(NC.6.NS.1)** Factors of 18: 1, 2, 3, 6, 9, 18. Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24. Common factors: 1, 2, 3, 6. GCF is 6.
- 7) **Choice A is correct.** **(NC.6.NS.6)** Opposite numbers all have equal absolute values.  $|-10| = |10| = 10$ ,  $|-6| = |6| = 6$ ,  $|-2| = |2| = 2$ .
- 8) **Choice D is correct.** **(NC.6.NS.8)** The points differ only in the sign of the  $y$ -coordinate, which is the definition of reflection across the  $x$ -axis.
- 9) **Choice D is correct.** **(NC.6.NS.6)** The lowest elevation is the most negative:  $-120 < -50 < 0 < 800$ . Canyon at  $-120$  m is lowest.
- 10) **Choice D is correct.** **(NC.6.NS.8)** The points share the same  $y$ -coordinate (2), so the distance is the difference of the  $x$ -coordinates:  $|5 - 1| = 4$  units.
- 11) **Choice A is correct.** **(NC.6.NS.3)**  $a + b - (-3) = -10 + 7 + 3 = 0$ .
- 12) **Choice A is correct.** **(NC.6.EE.1)** Inside the parentheses:  $4 + 1 = 5$ . After Step 1, the expression becomes  $5^2 \times 2$ , which is now ready for the exponent in Step 2.
- 13) **The correct answer is 24.** **(NC.6.G.4)** Solving:  $84 = \frac{1}{2} \times b \times 7 \Rightarrow b = 24$  m.
- 14) **Choice A is correct.** **(NC.6.EE.6)** “The quotient of  $g$  and 3” is  $\frac{g}{3}$ . “Increased by 1” means add 1:  $\frac{g}{3} + 1$ .
- 15) **Choice D is correct.** **(NC.6.EE.4)** The term  $25d$  represents the daily charge (25 per day) multiplied by the number of days. The constant 50 is the separate deposit.
- 16) **Choice A is correct.** **(NC.6.EE.3)** Substitute  $x = \frac{2}{3}$ :  $3(\frac{2}{3} - 2) + 4 = 3(-\frac{4}{3}) + 4 = -4 + 4 = 0$ .
- 17) **Choice A is correct.** **(NC.6.EE.3)** Distribute:  $3(x + 5) = 3 \cdot x + 3 \cdot 5 = 3x + 15$ .
- 18) **Choice D is correct.** **(NC.6.EE.5)** Check:  $7 + 8 = 15$  is true. Subtract 8 from both sides.
- 19) **The correct answer is 2.** **(NC.6.EE.3)** Using  $A = \frac{1}{2}(b_1 + b_2) \times h$ :  $80 = \frac{1}{2}(14 + b_2) \times 10 = 5(14 + b_2)$ . So  $16 = 14 + b_2$ , giving  $b_2 = 2$  ft.
- 20) **Choice C is correct.** **(NC.6.SP.1)** Total cost equals the monthly fee times months plus the one-time setup fee:  $C = 30m + 25$ .
- 21) **The correct answer is Food and Transportation are correctly calculated.** **(NC.6.EE.9)** A: Housing is  $35\% \times 2000 = \$700$ , not  $\$800$ . Incorrect. B: Food is  $25\% \times 2000 = \$500$ . Correct. C: Utilities is  $12\% \times 2000 = \$240$ , not  $\$260$ . Incorrect. D: Transportation is  $10\% \times 2000 = \$200$ . Correct. E: Other is  $18\% \times 2000 = \$360$ , not  $\$450$ . Incorrect.
- 22) **Choice B is correct.** **(NC.6.NS.8)** Perimeter =  $2(8 + 4) = 2(12) = 24$  units.
- 23) **The correct answer is 480.** **(NC.6.G.2)**  $V = 10 \times 6 \times 8 = 480$  in<sup>3</sup>.
- 24) **Choice A is correct.** **(NC.6.G.3)** Reflection over the  $y$ -axis changes the sign of the  $x$ -coordinate:  $(6, 2) \rightarrow (-6, 2)$ .
- 25) **Choice A is correct.** **(NC.6.SP.2)** The population is the entire group of interest (all community members). The sample is the subset of people who actually answered the survey. Samples are drawn from populations to estimate answers.



Scan me!  
For more practice  
& answers

**Inventor's Workshop Note**

---

**Hi, Math Inventor!**

◇ 6 practice tests. 6 chances to invent new ways to think. You tried things. You changed them. You made your math brain stronger! ◇

★ **Inventors know:** the first try isn't always the best try. Sometimes you fix it. Sometimes you start over. You did all of that! ★

**Inventor's Workshop**

- **Sketch Pad:** Full of ideas!
- **Toolbox:** Lots of math strategies.
- **Workbench:** Neat and organized.
- **Brave Mind:** You try new things.

**Inventor tip:** on test day, if your first try doesn't work, switch tools. Inventors don't get stuck on one tool. Pick the right one for the job!

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 Inventor

# PRACTICE TODAY. SUCCEED TOMORROW!

This Grade 6 Math Practice Tests book is designed to help students strengthen their math skills, master important concepts, and build the confidence they need to excel on comprehensive assessments.

With 6 full-length printed tests and 2 online tests, students get the review, practice, and realistic test experience they need to improve accuracy, develop problem-solving abilities, and reach their full potential.

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

6  
PRINTED  
TESTS

+  
2  
ONLINE  
TESTS

## PERFECT FOR:

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

★ BUILD SKILLS.  
GAIN CONFIDENCE.  
SUCCEED!

## 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.



### Deeper Understanding

Reinforce key concepts aligned with standards through meaningful practice.



### Test Confidence

Become familiar with test formats and improve accuracy and speed.



### 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.



6 FULL-LENGTH  
PRINTED TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS