

# 9

# North Carolina EOG

GRADE

# 6

MATH

# PRACTICE TESTS

Standards-Aligned Review  
Mixed Practice & Answer Key



## 9 PRINTED TESTS

Realistic practice to build confidence and mastery



## DETAILED ANSWER EXPLANATIONS

Learn with step-by-step solutions



## FOCUSED & EFFECTIVE

Target key math skills with purposeful practice



## BUILD CONFIDENCE

Strengthen problem solving and test-taking skills



**9 PRINTED TESTS**  
**+2 ONLINE TESTS**

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

**PRACTICE TODAY.**  
**SUCCEED TOMORROW.**



PRACTICE



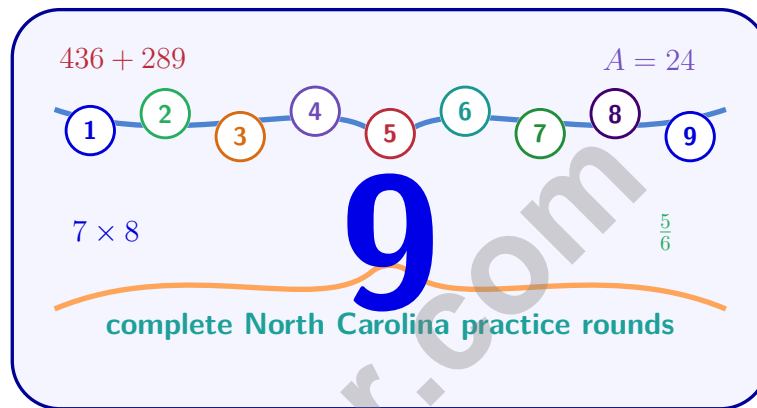
REVIEW



SUCCEED

# 9 North Carolina EOG Grade 6 Math Practice Tests

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



Nine 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!

Nine focused rounds using mountain-to-coast math practice

This book gives you nine 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 nine-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?

Nine EOG tests, 360 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 7–9	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.



Scan me!  
For more practice  
& answers

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1) On a number line, the midpoint between two numbers is  $-0.5$ . If one number is  $-2$ , what is the other number?

A.  $-3.5$

C.  $1.5$

B.  $-1$

D.  $1$

2) A company sells 480 products in one month. If 25% of the sales were online, how many products were sold online?

3) A baker needs to convert  $\frac{3}{4}$  of a pound of flour to ounces. How many ounces of flour does the baker need?

4) A paint can holds 3.8 liters. How much paint is in two cans?

A. 5.8 L

C. 6.8 L

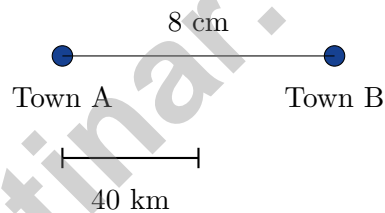
B. 1.9 L

D. 7.6 L



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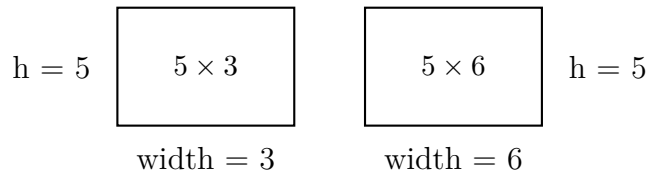
- 5) What is the reflection of the point  $(2, 6)$  across the  $x$ -axis?
- A.  $(-2, 6)$                        C.  $(-2, -6)$   
 B.  $(2, -6)$                        D.  $(6, 2)$
- 6) A student calculated the distance between  $(3, -2)$  and  $(7, -2)$  and got  $3 - 7 = -4$  units. What error did the student make?
- A. The student forgot to use absolute value       C. The student used the wrong formula  
 B. The student subtracted the  $y$ -coordinates instead of the  $x$ -coordinates       D. The student identified the wrong pair of points
- 7) A map shows two towns with a distance between them. The scale bar below indicates the distance.



- What is the actual distance between the towns?
- A. 80 km                       C. 160 km  
 B. 120 km                       D. 200 km
- 8) What is the GCF of 32 and 48?
- A. 8                               C. 24  
 B. 16                               D. 32



9) Which expression represents the total area of the two rectangles shown?

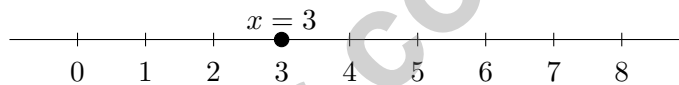


- A.  $(5 + 3)(5 + 6)$
- B.  $5(3 + 6)$
- C.  $3 + 5 + 6 + 5$
- D.  $5 + 3 + 5 + 6$

10) A bank account shows a balance of  $-\$42$ . What does this mean?

- A. The account has \$42 in it
- B. The account has zero dollars
- C. The account earned \$42 in interest
- D. The account is overdrawn by \$42

11)



Which number is less than  $x$ ?

- A. 4
- B. 5
- C. 1
- D. 6

12) What is  $-6 \times (-4)$ ?

- A.  $-24$
- B.  $-10$
- C. 10
- D. 24

13) Which step would you use first to solve  $\frac{x}{3} = 8$ ?

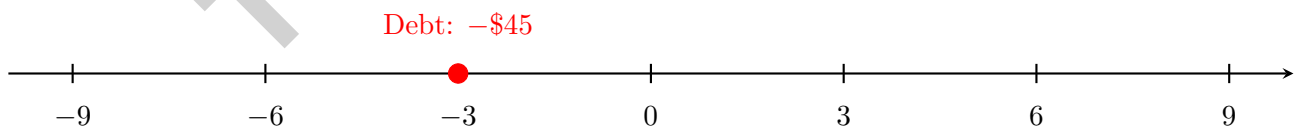
- A. Divide both sides by 3
- B. Multiply both sides by 3
- C. Add 3 to both sides
- D. Subtract 3 from both sides



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& answers

- 1) From the bar chart above, what percent of the total budget is allocated to rent?
- A. 25%                       C. 50%
- B. 40%                       D. 60%
- 2) A rectangle has length  $\ell$  and width 5. The area is  $5\ell$  square units. What are the factors of  $5\ell$ ?
- A. 5 only                       C. 5 and  $\ell$
- B.  $\ell$  only                       D.  $5\ell$  only
- 3) Divide 7,020 by 30.
- A. 234                       C. 240
- B. 230                       D. 244
- 4) Simplify the ratio 8 : 12 to lowest terms.

5)

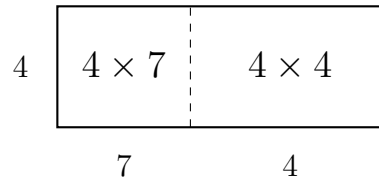


A bank account has a balance of  $-\$45$ . What does this represent in terms of absolute value?

- A. The account has \$45 owed                       C. The account has \$45 in savings
- B. The account has \$45 deposited                       D. The account is zero

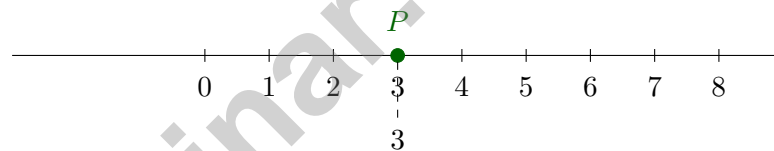


- 6) The diagram below shows an area split into two rectangles. What is the factored form?



- A.  $4(7 + 4) = 44$ 
 C.  $(7 + 4)(4) = 44$   
 B.  $7(4 + 4) = 56$ 
 D.  $4(7 \times 4) = 112$
- 7) A thermometer reads  $-5^{\circ}\text{F}$  in the morning. By afternoon, the temperature has risen by  $8^{\circ}\text{F}$ . What is the new temperature?

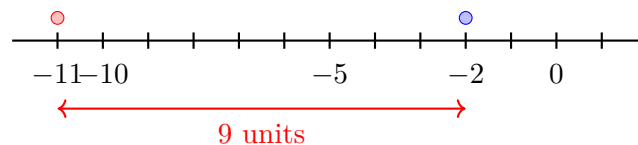
- A.  $13^{\circ}\text{F}$ 
 C.  $-13^{\circ}\text{F}$   
 B.  $3^{\circ}\text{F}$ 
 D.  $-3^{\circ}\text{F}$



- 8) Which number is less than  $P$ ?

- A. 5
  C. 2  
 B. 4
  D. 6

- 9) On a number line, what integer is 9 units to the left of  $-2$ ?



- A.  $-11$ 
 C. 7  
 B.  $-7$ 
 D. 11

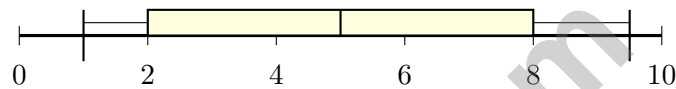


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1) Two banks offer simple interest on savings accounts. Bank A: principal \$200, rate 5% per year, time 3 years. Bank B: principal \$200, rate 3% per year, time 4 years. Which bank will earn more interest?

- A. Bank A earns more  
 B. Bank B earns more  
 C. They earn exactly the same  
 D. Cannot determine without knowing the starting balance

2) Using the box plot, find the value of the third quartile ( $Q_3$ ):



- A. 2  
 B. 5  
 C. 8  
 D. 9.5
- 3) A net shows 5 faces. Can this net form a pyramid or prism?
- A. Rectangular pyramid with a triangular base  
 B. Square pyramid  
 C. Triangular prism  
 D. Cannot determine

4) Find the median of the data set 2, 3, 4, 5, 100.



5) Two classes took the same test. Class A has a range of 20 points; Class B has a range of 50 points. What can you infer?

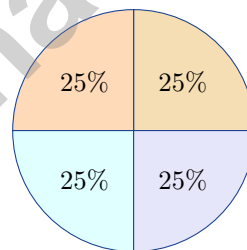
- A. Class A has better test scores       C. Class A has more consistent scores  
 B. Class B has better test scores       D. Class B is smaller than Class A

6) A fitness app records heart rates (bpm). The stem-and-leaf plot shows:

Stem	Leaf
6	8
7	2, 4, 6, 8
8	1, 3, 5, 7, 9
9	0, 2

Which range contains the most recorded heart rates?

- A. 80 – 89 bpm       C. 60 – 69 bpm  
 B. 70 – 79 bpm       D. 90 – 99 bpm



7)

The circle graph shows equal portions of 120 total items. What is the measure of the central angle for each section?

- A.  $45^\circ$        C.  $120^\circ$   
 B.  $75^\circ$        D.  $90^\circ$



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**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.**



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## North Carolina Practice Test Answers and Explanations

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

### Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** **(NC.6.NS.6)** Using midpoint formula:  $\frac{-2+x}{2} = -0.5 \Rightarrow -2 + x = -1 \Rightarrow x = 1$ .
- 2) **The correct answer is 120.** **(NC.6.RP.3)** 25% of 480 =  $0.25 \times 480 = 120$  products were sold online.
- 3) **The correct answer is 12.** **(NC.6.NS.3)** Multiply:  $\frac{3}{4}$  pound  $\times$  16 oz/pound = 12 ounces.
- 4) **Choice D is correct.** **(NC.6.NS.3)** Multiply:  $3.8 \times 2 = 7.6$  liters.
- 5) **Choice B is correct.** **(NC.6.NS.8)** Reflection across the  $x$ -axis changes the sign of the  $y$ -coordinate while the  $x$ -coordinate remains the same. The point (2, 6) becomes (2, -6).
- 6) **Choice A is correct.** **(NC.6.NS.8)** Correct:  $|3 - 7| = |-4| = 4$  units. Distance is always positive; must use absolute value.
- 7) **Choice C is correct.** **(NC.6.RP.3)** The scale bar represents 2 cm = 40 km. So 8 cm =  $4 \times 40 = 160$  km.
- 8) **Choice B is correct.** **(NC.6.NS.4)** Common factors shared by 32 and 48 are 1, 2, 4, 8, and 16; the greatest is 16. (You can also peel out matching prime factors: both have four factors of 2 in common.)
- 9) **Choice B is correct.** **(NC.6.NS.1)** Each rectangle has height 5. The widths are 3 and 6. Total area =  $5 \times 3 + 5 \times 6 = 5(3 + 6) = 45$ .
- 10) **Choice D is correct.** **(NC.6.EE.3)** A negative balance means the account owes money. An account balance of  $-\$42$  means the account is overdrawn (or in debt) by \$42.
- 11) **Choice C is correct.** **(NC.6.NS.6)**  $x = 3$ . Since  $1 < 3$ , the number 1 is less than  $x$ .
- 12) **Choice D is correct.** **(NC.6.NS.3)** The product of two negatives is positive:  $(-6) \times (-4) = 24$ .
- 13) **Choice B is correct.** **(NC.6.EE.5)** To undo division, multiply. This isolates  $x$  on the left side.
- 14) **Choice C is correct.** **(NC.6.EE.8)**  $n \geq 4$  requires  $n$  to be 4 or greater. Since  $3 < 4$ , it does not satisfy the inequality.
- 15) **Choice B is correct.** **(NC.6.SP.1)** A proportional relationship has the form  $y = kx$  with no constant term. Option B, cost =  $10 \times$  items, is proportional. Options A, C, D all have additional fees or fixed amounts.
- 16) **The correct answer is 1600.** **(NC.6.EE.9)** Total:  $\$900 + \$150 + \$350 + \$200 = \$1600$ .
- 17) **Choice B is correct.** **(NC.6.EE.3)** Using  $140 = 20 \times h$ , we get  $h = 7$  cm.
- 18) **Choice B is correct.** **(NC.6.RP.4)** Area =  $\pi r^2 \approx \frac{22}{7} \times 8^2 = \frac{22}{7} \times 64 = \frac{1408}{7} = 201\frac{1}{7} \approx 201$  m<sup>2</sup>.
- 19) **Choice B is correct.** **(NC.6.SP.2)** Set B has the outlier 24, making it more skewed. The means are not equal, and Set A does not have a larger outlier.
- 20) **Choice C is correct.** **(NC.6.SP.4)** The frequency column shows exactly how many times each value appears. The frequency of 7 is 5. Cumulative frequency adds up to 14 total, making the mode 7, and the frequency of 6 is 4, not 11.
- 21) **Choice B is correct.** **(NC.6.SP.4)** Values range from 24 to 35, covering stem 2 (20s: 24, 26, 28, 29) and stem 3 (30s: 31, 32, 35).
- 22) **The correct answer is Plan X shows a proportional relationship, and it is represented by  $e = 20h$ .** **(NC.6.RP.2)** Statement A is correct: Plan X has equation  $e = 20h$ , so it is proportional. Statement C matches the equation for Plan X. Plan Y has equation  $e = 100 + 10h$ , so it is not proportional and its graph does not pass through the origin. After 10 hours, both plans pay \$200, so D is false.
- 23) **Choice D is correct.** **(NC.6.NS.3)**  $6,750 \div 25 = 270$ . Check:  $25 \times 270 = 6,750$ .
- 24) **The correct answer is 14 pieces.** **(NC.6.NS.2)** You're counting tiny  $\frac{1}{16}$ -meter pieces inside  $\frac{7}{8}$  meter:  $\frac{7}{8} \div \frac{1}{16} = \frac{7}{8} \times 16 = \frac{112}{8} = 14$  pieces.
- 25) **Choice A is correct.** **(NC.6.NS.6)** The opposite of a positive number is its negative. The opposite of 7 is  $-7$ , equidistant from zero on the other side.



Scan me!  
For more practice  
& answers

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## Author's Note

### From a Friend Who Believes in You

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#### Hi, Friend!

◇ I just want to say something important: I am proud of you. You did 9 full practice tests. That takes time, hard work, and heart. ◇

★ **Friendly truth:** a test is just one part of your math journey. You are SO much more than a score. The work you did is the real win! ★

#### What I Want You to Know

- **You are smart.** Every test you finished proves it.
- **You are brave.** You tried hard problems.
- **You are growing.** Mistakes taught you new things.
- **You are ready.** The skills are inside you.

**One more thing:** on test day, take a deep breath. Smile. Remember that someone (me!) believes in you. You can do this!

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 Friend

# PRACTICE MORE. ACHIEVE MORE.

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 any test.

With 9 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.

## 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.



### Deeper Understanding

Reinforce key math concepts 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.



9 PRINTED  
PRACTICE TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS