

# 7 North Carolina EOG

## Grade 6 MATH

### PRACTICE TESTS

7  
PRINTED  
TESTS

+

2  
ONLINE  
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



7 Full-Length  
Printed Tests



Standards-Aligned  
Math Practice



Detailed Answer Keys  
and Explanations



Build Confidence.  
Achieve Success.



You've  
Got  
This!



PREPARE  
PRACTICE  
SUCCEED



PRACTICE  
WITH PURPOSE



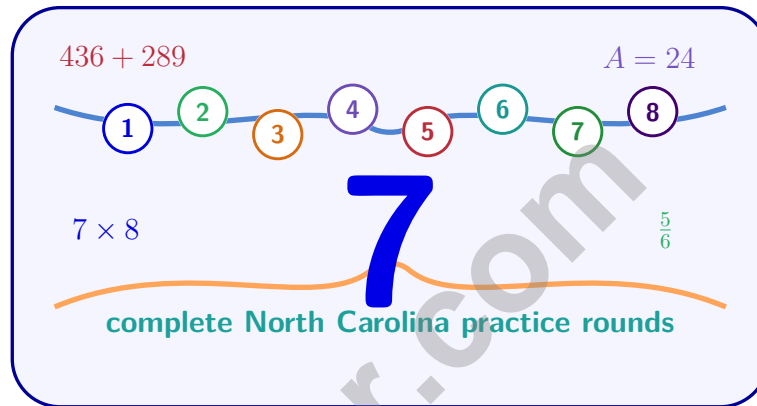
STRENGTHEN  
MATH SKILLS



REVIEW, IMPROVE,  
AND SUCCEED

# 7 North Carolina EOG Grade 6 Math Practice Tests

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



Seven 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 seven 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 seven-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.
Test 7	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

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1) On a number line, start at  $-9$  and move 15 units to the right. Where do you end up?

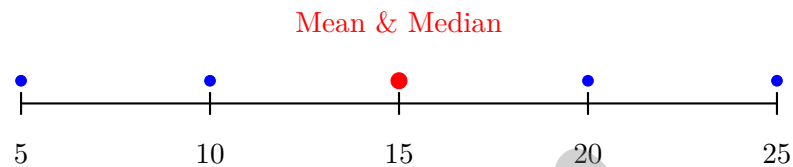
A.  $-24$

C.  $6$

B.  $-6$

D.  $24$

2) Find the mean of the 5 values shown. Which also equals the median?



A.  $10$

C.  $20$

B.  $25$

D.  $15$

3) A survey records hours of sleep for eight students:  $6, 7, 6, 8, 9, 7, 8, 10$ . When ordered:  $6, 6, 7, 7, 8, 8, 9, 10$ . Calculate the mean absolute deviation. (Mean =  $7.625$ )

A.  $0.875$

C.  $1.25$

B.  $1.0625$

D.  $2$

4) A data analyst looks at two side-by-side box plots. Plot A has  $Q_1 = 10$ , median =  $20$ ,  $Q_3 = 30$ . Plot B has  $Q_1 = 15$ , median =  $20$ ,  $Q_3 = 25$ . Which conclusion is INCORRECT?

A. Both datasets have the same median.

C. Dataset B's lower whisker is longer than Dataset A's.

B. Dataset A has a larger IQR than Dataset B.

D. Both datasets have the same spread.



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5) A stem-and-leaf plot shows test scores: Stem 6: Leaf 5, 7, 9 Stem 7: Leaf 1, 2, 2, 4, 4, 8 Stem 8: Leaf 0, 3, 6, 9 Stem 9: Leaf 2, 5

What is the median test score?

- A. 72  C. 78  
 B. 80  D. 74

6) A soccer field has goal markers and corner flags arranged in a pattern. There are 9 goal markers and 3 corner flags. Which statement is NOT correct?

- A. The ratio of markers to flags is 9 : 3.  C. For every 3 markers there is 1 flag.  
 B. The simplified ratio is 3 : 1.  D. For every 1 marker there are 3 flags.

7) A factory produces 360 widgets in 8 hours. What is the production rate in widgets per hour?

- A. 40 widgets/hr  C. 50 widgets/hr  
 B. 45 widgets/hr  D. 60 widgets/hr

8) A student fills in a ratio table but makes an error. Which entry is wrong?

Hours Worked	Money Earned (\$)
2	18
4	36
6	54
7	64

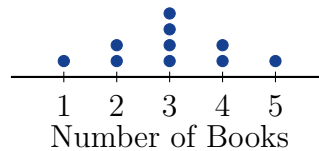
- A. 2 : 18 is wrong  C. 6 : 54 is wrong  
 B. 4 : 36 is wrong  D. 7 : 64 is wrong



9) A large IQR indicates what about a data set?

- A. The data is very tightly clustered       D. The middle 50% of the data is spread out
- B. There are no outliers present
- C. All values are identical

10) The dot plot shows the number of books read by students last month. How many students read exactly 3 books?



- A. 2       C. 4
- B. 3       D. 5
- 11) A deck of cards has 52 cards: 13 hearts, 13 diamonds, 13 clubs, and 13 spades. What is the probability of drawing a heart?

- A.  $\frac{1}{52}$        C.  $\frac{13}{39}$
- B.  $\frac{1}{13}$        D.  $\frac{1}{4}$

12) A back-to-back stem-and-leaf plot compares two data sets with a shared stem of 6. Class A (left) shows leaf 9. What value does this leaf represent?

- A. 96       C. 69
- B. 59       D. Cannot be determined



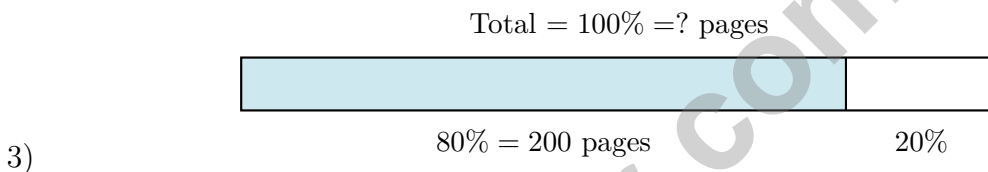
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& answers

1) Which of these pairs of expressions are equivalent?

- A.  $3(x + 2)$  and  $3x + 2$ 
 C.  $4x - 4x + 2$  and  $2x$   
 B.  $5(2y - 1)$  and  $10y - 5$ 
 D.  $2(3a + b)$  and  $6a + b$

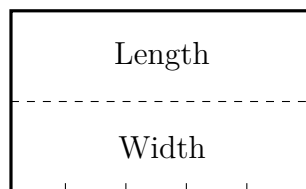
2) Which pair shows equivalent expressions for dividing  $\frac{4}{5}$  by  $\frac{2}{3}$ ?

- A.  $\frac{4}{5} \times \frac{2}{3}$  and  $\frac{8}{15}$ 
 C.  $\frac{4}{5} \times \frac{3}{2}$  and  $\frac{12}{10}$   
 B.  $\frac{4}{5} \div \frac{3}{2}$  and  $\frac{12}{10}$ 
 D.  $\frac{2}{3} \times \frac{4}{5}$  and  $\frac{6}{20}$



If 80% of a book's pages equals 200 pages, how many total pages does the book have?

- A. 160
  C. 250  
 B. 240
  D. 300
- 4) A rectangular garden is divided into a length-to-width ratio of 5 : 3. If the width is 12 feet, what is the length?



- A. 20 feet
  C. 15 feet  
 B. 18 feet
  D. 24 feet

5) A model airplane has a wingspan of 18 inches. The actual airplane has a wingspan of 54 feet. What is the scale of the model (in inches to feet)?

A. 1 inch = 2 feet

C. 1 inch = 6 feet

B. 1 inch = 9 feet

D. 1 inch = 3 feet

6) A company is packing gift sets. They have 32 mugs and 48 candles. Each gift set will have the same number of mugs and candles with nothing left over. What is the maximum number of gift sets?

A. 8 sets

C. 16 sets

B. 12 sets

D. 32 sets

7) Simplify the ratio 36 : 48 to its lowest terms. Show the GCF you use.

8) What is the GCF of 21 and 28?

A. 2

C. 7

B. 4

D. 14

9) Which of these situations would be represented by a negative integer?

A. Climbing a mountain 200 meters

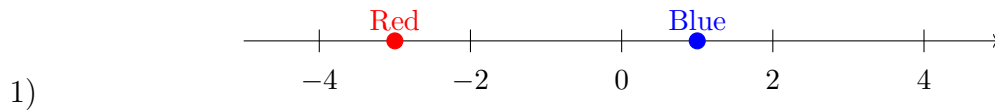
C. Swimming down 5 meters below the surface

B. A temperature increase of  $10^{\circ}$

D. Earning 50 dollars



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& answers



Which is true?

- A. Red = Blue
- B. Red > Blue
- C. Red < Blue
- D. They are opposite
- 2) A paint manufacturer creates batches in which the ratio of red to blue to yellow is always 2 : 3 : 4. If a batch contains 8 liters of red paint, what is the total volume of the entire batch?
- A. 18 L
- B. 24 L
- C. 36 L
- D. 48 L
- 3) Which rate is equivalent to \$8 per gallon?
- A. \$16 per 2 gallons
- B. \$4 per gallon
- C. \$24 per 4 gallons
- D. \$40 per 6 gallons
- 4) A ribbon is 36 inches long. How many yards is the ribbon? (Use 1 yard = 36 inches.)
- A. 1 yard
- B. 2 yards
- C. 3 yards
- D. 12 yards
- 5) A cable is 5 meters long and is divided into sections of  $\frac{5}{6}$  meter each. How many sections are there?
- A. 5
- B. 6
- C. 8
- D. 10



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& answers

6) Bus Route A stops every 8 minutes. Bus Route B stops every 12 minutes. If both buses just left the station, when will they both be at the station again at the same time?

- A. In 8 minutes                       C. In 20 minutes  
 B. In 12 minutes                       D. In 24 minutes

7) A savings account earns \$15 per month. After 8 months, how much more money is in the account?

- A. \$7                                       C. \$120  
 B. \$23                                     D. -\$120

8) An online grocery store sells canned beans. 9 cans cost \$5.40. What is the unit price per can?

- A. \$0.50 per can                       C. \$0.70 per can  
 B. \$0.60 per can                       D. \$1.00 per can

9) A craft store sells beads in bulk. The table shows the relationship between number of beads and cost:

Number of Beads	Cost (\$)
100	2.50
200	5.00
?	7.50

- A. 250                                       C. 350  
 B. 300                                       D. 400



**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 seven printed EOG tests with balanced, careful, and ready for the next route habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** **(NC.6.NS.3)**  $-9 + 15 = 6$ .
- 2) **Choice D is correct.** **(NC.6.SP.2)** Mean =  $\frac{5 + 10 + 15 + 20 + 25}{5} = \frac{75}{5} = 15$ . For symmetric data, mean equals median.
- 3) **Choice B is correct.** **(NC.6.SP.3)** Distances from mean 7.625:  $|6 - 7.625| = 1.625$ ,  $|6 - 7.625| = 1.625$ ,  $|7 - 7.625| = 0.625$ ,  $|7 - 7.625| = 0.625$ ,  $|8 - 7.625| = 0.375$ ,  $|8 - 7.625| = 0.375$ ,  $|9 - 7.625| = 1.375$ ,  $|10 - 7.625| = 2.375$ . Sum = 8.5. MAD =  $8.5/8 = 1.0625$ .
- 4) **Choice D is correct.** **(NC.6.NS.4)** Plot A has IQR = 20; Plot B has IQR = 10. Since the IQR values differ, the datasets have different spreads in the middle 50% of data. Both have the same median (20), but their variability is different.
- 5) **Choice D is correct.** **(NC.6.SP.4)** There are 15 data values: 65, 67, 69, 71, 72, 72, 74, 74, 78, 80, 83, 86, 89, 92, 95. With an odd count, the median is the middle value at position 8, which is 74.
- 6) **Choice D is correct.** **(NC.6.RP.1)** The marker-to-flag ratio is 9 : 3, which simplifies to 3 : 1. That means for every 3 markers there is 1 flag, not the reverse.
- 7) **Choice B is correct.** **(NC.6.RP.2)**  $360 \div 8 = 45$  widgets per hour.
- 8) **Choice D is correct.** **(NC.6.RP.3)** Ratio is 1 : 9 (unit rate: \$9/hour). Rows 1-3:  $2 : 18 = 1 : 9$ ,  $4 : 36 = 1 : 9$ ,  $6 : 54 = 1 : 9$  (all correct). Row 4:  $7 : 64 \neq 1 : 9$  (should be 7 : 63). Entry 7 : 64 breaks the pattern.
- 9) **Choice D is correct.** **(NC.6.SP.2)** IQR =  $Q3 - Q1$  measures the spread of the middle 50% of data. A large IQR means those middle values are far apart.
- 10) **Choice C is correct.** **(NC.6.SP.4)** Count the dots above the number 3: there are 4 dots, so 4 students read exactly 3 books.
- 11) **Choice D is correct.** **(NC.6.RP.4)** Hearts in deck = 13. Total cards = 52. Probability =  $\frac{13}{52} = \frac{1}{4}$ .
- 12) **Choice C is correct.** **(NC.6.SP.4)** In a back-to-back stem-and-leaf plot, the stem is shared in the middle (here, stem 6). Leaf 9 on Class A's side combines with stem 6 to form 69.
- 13) **Choice C is correct.** **(NC.6.SP.1)** Since  $\frac{1}{3} \approx 0.333$ , the 33.3% section is the closest match.
- 14) **Choice A is correct.** **(NC.6.EE.1)** Apply the exponent first:  $3^2 = 9$ . Then add:  $2 + 9 = 11$ . The student incorrectly added before applying the exponent, treating it as  $(2 + 3)^2$ .
- 15) **The correct answer is 14.** **(NC.6.NS.6)** Distance is calculated as  $7 - (-7) = 7 + 7 = 14$  units. Absolute value gives the magnitude:  $|7 - (-7)| = 14$ .
- 16) **Choice A is correct.** **(NC.6.EE.6)** "Three times a number  $d$ " is  $3d$ . "The sum of  $3d$  and 5" means  $3d + 5$ .
- 17) **Choice C is correct.** **(NC.6.EE.4)** Combining like terms:  $(5x + 2x) + (3 - 1) = 7x + 2$ . The coefficient of  $x$  in the simplified expression is 7.
- 18) **The correct answer is A uses the division method; E verifies the answer..** **(NC.6.NS.2)** A correctly divides:  $4 \div \frac{1}{3} = 12$  bottles. E checks:  $12 \times \frac{1}{3} = 4$  gallons. B multiplies but gets total juice, not bottle count. C divides backwards. D is conceptually sound but cumbersome.
- 19) **Choice B is correct.** **(NC.6.EE.3)** Substitute  $n = 3$ :  $12 - 3(3 - 1) = 12 - 3(2) = 12 - 6 = 6$ .
- 20) **Choice D is correct.** **(NC.6.EE.3)** Distribute:  $9(x + 2) = 9 \cdot x + 9 \cdot 2 = 9x + 18$ .
- 21) **Choice B is correct.** **(NC.6.EE.5)** Subtract 3.5 from both sides:  $x = 9.2 - 3.5 = 5.7$ .
- 22) **Choice D is correct.** **(NC.6.RP.3)** First find the total fruit:  $15 + 25 = 40$ . Bananas to total is  $25 : 40$ , and dividing both parts by 5 gives  $5 : 8$ .



## Hi, Hero!

◇ Once there was a Grade 6 student who took 7 practice tests. At first, the math was tricky. But this student kept showing up, kept trying, and kept learning. By the end, the student became a math hero. That hero is you! ◇

★ **Storytellers know:** every story has a hard middle. The hard middle is where heroes grow. You lived your hard middle. Your story ends with confidence! ★

### Your Hero Toolkit

- **Brave Heart:** You try hard problems.
- **Sharp Mind:** You think carefully before you act.
- **Steady Hand:** You write neatly and check.
- **Kind Spirit:** You are patient with yourself.

**Storyteller tip:** on test day, remember the hero you became. The chapters before today made you stronger. Now write your best chapter!

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 Storyteller

# MASTER 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 7 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 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.



7 FULL-LENGTH  
PRINTED TESTS



STANDARDS-  
ALIGNED PRACTICE



DETAILED ANSWER  
KEYS & EXPLANATIONS