

3

North Carolina

EOG

GRADE

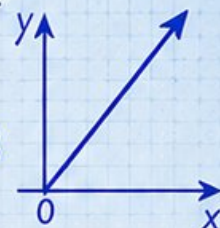
6

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

$$y = 2x + 3$$



$$\frac{3}{5} + \frac{2}{10} = \frac{8}{10} = \frac{4}{5}$$

$$36\% \text{ of } 150 = ?$$



3 | PRINTED TESTS



2 | ONLINE TESTS



Build Confidence



Master Key Math Skills



Answer Explanations for Every Question



Test-Taking Strategies That Work

USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

3 North Carolina EOG Grade 6 Math Practice Tests

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

$436 + 289$ $A = 24$

1 2 3

3×10 3 $\frac{3}{4}$

complete North Carolina practice rounds

Three 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!

Three focused rounds using mountain-to-coast math practice

This book gives you three 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 three-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?

Three EOG tests, 120 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Test 3	Final stamina round for expressions, equations, geometry, data, problem models, and mixed review.
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) A bank account has a balance of $-\$50$ (overdrawn by $\$50$). If the account holder withdraws $\$15$ more, what is the new balance?

A. $-\$35$

C. $\$65$

B. $\$35$

D. $-\$65$

2)

Yards	1	3
Feet	3	?

Complete the ratio table. How many feet are in 3 yards?

A. 6 feet

C. 12 feet

B. 15 feet

D. 9 feet

3) On a number line, which two integers are exactly 8 units apart?



A. -4 and 0

C. 0 and 4

B. -2 and 2

D. -4 and 4

4) You need to save more than $\$200$ for a new computer. If s is the amount you save, which inequality represents this?

A. $s < 200$

C. $s \leq 200$

B. $s = 200$

D. $s > 200$



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5) A graph with time in hours on the x-axis and distance in miles on the y-axis shows the points (1, 45), (2, 90), and (3, 135).

Which statement about this graph is true?

- A. The unit rate is 45 miles per hour and the relationship is proportional
- B. The unit rate is 90 miles per hour and the relationship is proportional
- C. The relationship is not proportional because the points are not at the origin
- D. The unit rate cannot be determined from these points

6) A library has 250 books. If 150 books are checked out, what percent are checked out?

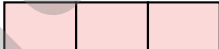
- A. 60%
- B. 50%
- C. 40%
- D. 100%

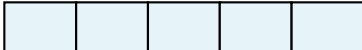
7) A store advertises "Buy 1, Get 1 at 50% Off." If one shirt costs \$40, what is the total cost for both shirts?

- A. \$40
- B. \$50
- C. \$80
- D. \$60

8) Sam says the ratio of boys to girls in a class is 3 : 5, and there are 40 students total. He calculates there are 25 boys and 15 girls. What is Sam's error?

Ratio 3 : 5 (Boys:Girls)

Boys:  3 parts $\times 5 = 15$ students

Girls:  5 parts $\times 5 = 25$ students

Sam flipped the groups: he used 25 for boys and 15 for girls.

- A. He flipped the ratio
- B. He divided instead of multiplied
- C. He forgot to find the unit rate
- D. His calculation is correct



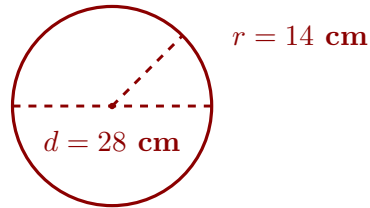
1) Find the LCM of 5 and 9.

A. 45

C. 40

B. 35

D. 15



2)

What is the approximate area of a circle with diameter 28 cm? Use $\pi \approx \frac{22}{7}$.

A. 88 cm^2

C. 616 cm^2

B. 264 cm^2

D. 1232 cm^2

3) Which question is NOT statistical?

A. What was the temperature each day last week?

C. What is the favorite sport of students in this school?

B. How many hours do sixth graders sleep each night?

D. What is the boiling point of water?

4) Which of the following describes the CENTER of a data set?

A. Range

C. Interquartile range

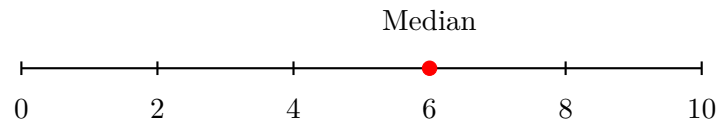
B. Median

D. Maximum value



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5) Which number line correctly shows where the median of 2, 4, 6, 8, 10 lies?



- A. At 2 C. At 6
 B. At 4 D. At 8

6) A data set in order: 4, 6, 8, 10, 12, 14. The median is 9. What are Q1 and Q3?

- A. $Q1 = 6, Q3 = 12$ C. $Q1 = 4, Q3 = 12$
 B. $Q1 = 6, Q3 = 14$ D. $Q1 = 8, Q3 = 12$

7) A frequency table is created from a dot plot. The table shows: Value 2: Frequency 4; Value 3: Frequency 6; Value 4: Frequency 5; Value 5: Frequency 3. How many data points are in this data set?

Value	Frequency
2	4
3	6
4	5
5	3

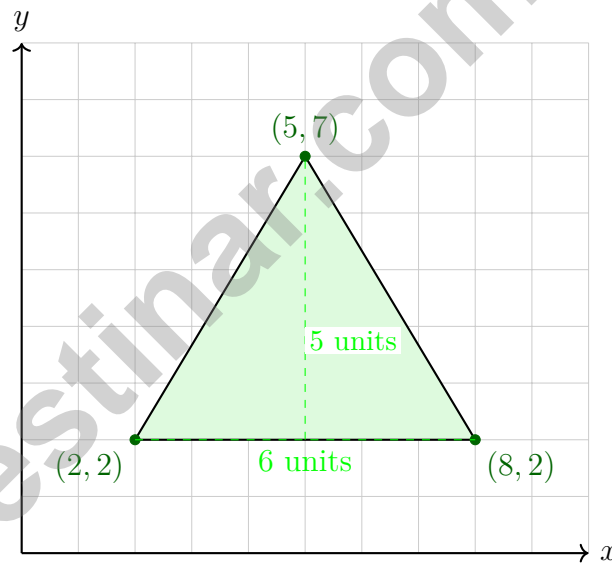
- A. 15 data points C. 17 data points
 B. 16 data points D. 18 data points

8) In a box plot, what does the left edge of the box represent?

- A. The minimum C. The median
 B. Q_1 D. The mean



- 1) If a rectangular prism has length 12 cm, width 9 cm, and height 6 cm, what is the lateral surface area (area of the 4 vertical faces, not including top and bottom)?
- A. 108 cm^2 C. 216 cm^2
 B. 180 cm^2 D. 252 cm^2
- 2) A chocolate box has length 5 in, width 3 in, and height $\frac{1}{2}$ in. What is its volume?
- A. 4.5 in^3 C. 15 in^3
 B. 7.5 in^3 D. 30 in^3



3)

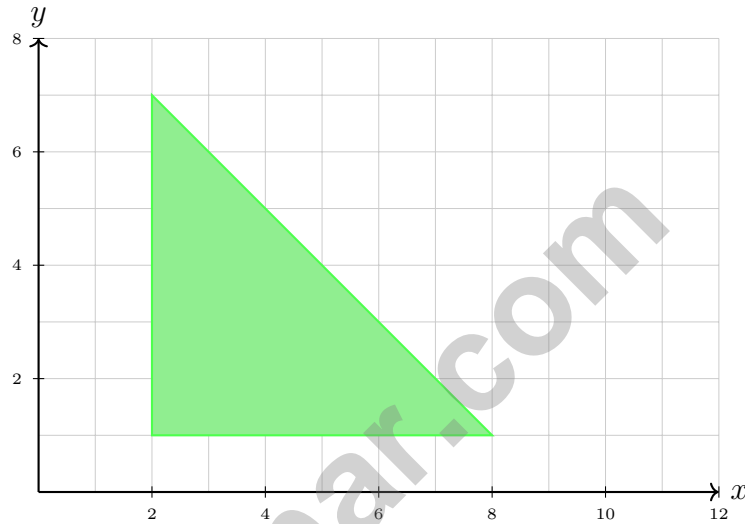
What is the area of this triangle?

- A. 15 square units C. 25 square units
 B. 20 square units D. 30 square units



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4) A point is located on the negative x -axis. What is its y -coordinate?



5)

A right triangle has vertices at $(2, 1)$, $(8, 1)$, and $(2, 7)$. What is its area?

- A. 15 square units C. 21 square units
 B. 18 square units D. 24 square units

6) Point A is located at $(3, 5)$. If it is translated 4 units to the left and 2 units down, what are the coordinates of its image A' ?

- A. $(-1, 3)$ C. $(-1, 7)$
 B. $(7, 7)$ D. $(7, 3)$



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 three 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.3) Starting at -50 and withdrawing (going more negative) $\$15$: $-50 - 15 = -65$.
- 2) **Choice D is correct.** (NC.6.NS.3) The ratio is 1 yard = 3 feet. Multiply both sides by 3: 3 yards = 9 feet.
- 3) **Choice D is correct.** (NC.6.EE.3) The distance between -4 and 4 is $4 - (-4) = 4 + 4 = 8$ units. These two numbers are 8 units apart on a number line.
- 4) **Choice D is correct.** (NC.6.EE.8) "More than 200" means strictly greater: $s > 200$.
- 5) **Choice A is correct.** (NC.6.NS.6) The unit rate is $\frac{45}{1} = 45$ miles per hour. Since the ratio is constant ($\frac{90}{2} = 45$, $\frac{135}{3} = 45$), the relationship is proportional. A proportional relationship through the origin has all ratios equal.
- 6) **Choice A is correct.** (NC.6.RP.2) $\frac{150}{250} = \frac{3}{5} = \frac{60}{100} = 60\%$.
- 7) **Choice D is correct.** (NC.6.RP.3) First shirt: $\$40$. Second shirt at 50% off: $0.50 \times 40 = 20$. Total: $\$40 + \$20 = \$60$.
- 8) **Choice A is correct.** (NC.6.RP.3) Ratio 3 : 5 means 3 parts boys and 5 parts girls, totaling 8 parts. Each part = $40 \div 8 = 5$ students, so there are $3 \times 5 = 15$ boys and $5 \times 5 = 25$ girls. Sam swapped the two values.
- 9) **Choice C is correct.** (NC.6.NS.9) After taxes: $\$2000 \times (1 - 0.15) = \$2000 \times 0.85 = \$1700$. Savings: 20% of $\$1700 = 0.20 \times 1700 = \340 .
- 10) **Choice B is correct.** (NC.6.RP.2) Using $d = 60t$ with $t = 2.5$: $d = 60 \times 2.5 = 150$ miles.
- 11) **Choice D is correct.** (NC.6.EE.9) Total allocated: $\$3000 + \$2000 + \$1500 + \$1500 = \$8000$. Unallocated: $\$10000 - \$8000 = \$2000 = 20\%$ of $\$10000$.
- 12) **Choice B is correct.** (NC.6.RP.3) Divide the actual length by the scale factor: $60 \div 12 = 5$ inches.
- 13) **The correct answer is 4.** (NC.6.RP.1) Flour is the 5-part amount. Since $10 \div 5 = 2$, each part is 2 cups, and sugar is 2 parts: $2 \times 2 = 4$ cups.
- 14) **Choice C is correct.** (NC.6.NS.2) $\frac{11}{12} \times 3 = \frac{33}{12} = \frac{11}{4} = 2\frac{3}{4}$.
- 15) **Choice A is correct.** (NC.6.NS.3) $9,108 \div 52 = 175$ remainder 8. Check: $52 \times 175 = 9,100$, and $9,100 + 8 = 9,108$. So the whole-number quotient is 175.
- 16) **Choice A is correct.** (NC.6.NS.3) Subtract: $\$34.50 - \$7.25 = \$27.25$.
- 17) **Choice B is correct.** (NC.6.NS.4) $50 = 2 \times 25 = 2 \times 5 \times 5 = 2 \times 5^2$. Options A and C use composite numbers; D is not factored.
- 18) **Choice C is correct.** (NC.6.NS.1) Find GCF(12, 18). Factors of 12: 1, 2, 3, 4, 6, 12. Factors of 18: 1, 2, 3, 6, 9, 18. GCF is 6. She can make 6 piles with 2 red shirts and 3 blue shirts each.
- 19) **Choice A is correct.** (NC.6.NS.6) Computing: $|-2| = 2$, $|-5| = 5$, $|6| = 6$, $|-9| = 9$. In order: $2 < 5 < 6 < 9$.
- 20) **The correct answer is 4 : 6 = 2 : 3 (dividing by 2) and 4 : 6 = 8 : 12 (multiplying by 2).** (NC.6.RP.3) Nice checking: Choice A works because $4 : 6$ simplifies to $2 : 3$, and Choice B works because multiplying both parts of $4 : 6$ by 2 gives $8 : 12$. The other choices change the relationship.
- 21) **Choice A is correct.** (NC.6.NS.6) Opposites are the same distance from zero on opposite sides. Both -3 and 3 are distance 3 from the origin.
- 22) **Choice A is correct.** (NC.6.NS.8) Points on the y -axis have $x = 0$. For the negative y -axis, the y -coordinate must be negative, so $(0, -7)$ is correct.
- 23) **The correct answer is 720 items.** (NC.6.RP.3) First, find the unit rate: $420 \div 7 = 60$ items per hour. Then multiply by 12 hours: $60 \times 12 = 720$ items.
- 24) **Choice B is correct.** (NC.6.NS.6) Find the distance from -1.2 to each choice: to -2 is 0.8, to -1 is 0.2, to 0 is 1.2, to 3 is 4.2. The smallest distance is to -1 , so it is the closest.



Hi, Math Champion!

◇ You trained hard! 3 full practice tests is real practice. Your math game is way better now than when you started. ◇

★ **Coach's truth:** kids who practice get better. You practiced. You got better. That's how it works!
★

Your Game Stats

- **Energy:** HIGH! You can finish a long test.
- **Smart Plays:** You know lots of strategies.
- **Calm Head:** You stay cool with hard problems.
- **Game-Day Ready:** You feel strong and prepared.

Coach's tip: the night before the test, get good sleep. Eat a good breakfast. Bring a sharp pencil. Trust your training!

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

Jay Daie

Your Math Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 3 full-length Math practice tests and 2 online tests to help Grade 6 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:

- 3 Full-Length Printed Tests
 - 2 Online Practice Tests
-  Detailed Answer Explanations

MORE PRACTICE. GREATER RESULTS.

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

WHAT YOU'LL 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 with clear explanations and meaningful practice.



Test Confidence

Familiarize 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

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



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AND LEARNING RESOURCES



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BRIGHTLY

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