

3

North Carolina

EOG

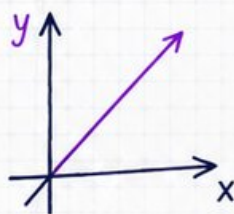
GRADE

7

MATH

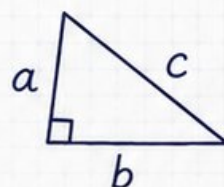
PRACTICE TESTS

✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



$$3(x - 2) = 2x + 5$$



3 PRINTED TESTS



2 ONLINE TESTS



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



Build
Confidence



Strengthen
Math Skills



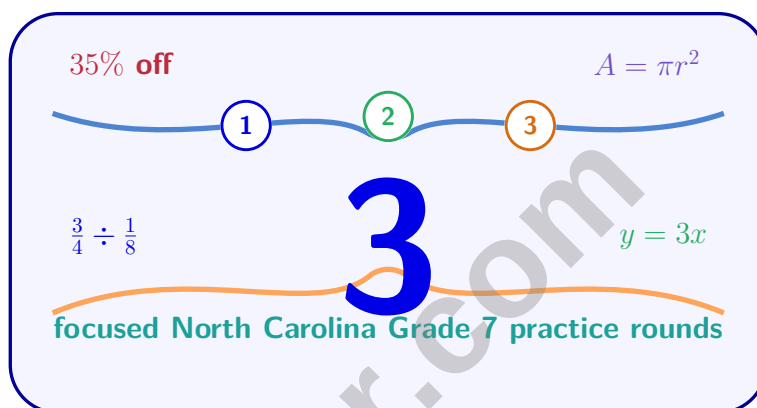
Detailed Answers
& Explanations



Improve Test
Performance

3 North Carolina EOG Grade 7 Math Practice Tests

EOG Review for Grade 7 Skills, Stamina, and Accuracy



Three complete 40-question Grade 7 EOG practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, North Carolina Grade 7 Problem Solver!

Three focused rounds for sharper EOG math thinking

This book gives you three full Grade 7 EOG math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your North Carolina Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A three-session plan for confident Grade 7 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

North Carolina review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

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

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Test 3	Expressions, equations, inequalities, scale drawings, geometry, data, probability, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

Table of Contents

★ Practice Test 1	_____	13
★ Practice Test 2	_____	27
★ Practice Test 3	_____	42
Practice Test Answer Keys	_____	55
Practice Test Answers and Explanations	_____	58

- 1) A student scores -3 points for each incorrect answer. If the student has 6 incorrect answers, what is the total point deduction?

☐ A. -18 points
☐ B. -3 points
☐ C. 3 points
☐ D. 18 points

- 2) **Error Analysis: Using Wrong Denominator**

A student calculated percent error as $\frac{|28-35|}{28} \times 100\%$ instead of the correct formula.

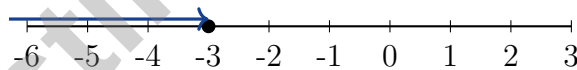
What error did the student make?

☐ A. Used estimate in denominator instead of actual
☐ B. Forgot to multiply by 100%
☐ C. Subtracted wrong order
☐ D. Divided by 28 instead of 100

- 3) Expand: $4(2x - 3)$

☐ A. $6x - 12$
☐ B. $8x - 12$
☐ C. $8x - 3$
☐ D. $6x - 7$

- 4) Graph the inequality $y \leq -3$ on a number line.



☐ A. Closed circle at -3 pointing left
☐ B. Open circle at -3 pointing left
☐ C. Closed circle at -3 pointing right
☐ D. Open circle at -3 pointing right

- 5) An investment of \$3000 earns \$270 in simple interest over 2 years. What is the annual interest rate?

☐ A. 3%
☐ B. 9%
☐ C. 5%
☐ D. 4.5%



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6) What is $12 + (-5)$?

☐ A. 7

☐ C. 17

☐ B. -7

☐ D. -17

7) A bank account has a balance of -45 dollars (overdrawn). After a deposit and withdrawal, the balance becomes -20 dollars. What was the net change in the account (deposit minus withdrawal)? Write your answer as an integer with the appropriate sign.

8) Simplify: $-4m + 6m - 5m$

☐ A. $-7m$

☐ C. $7m$

☐ B. $-3m$

☐ D. $3m$

9) A simulation is designed to estimate the probability of getting exactly two tails in three coin flips. What is the theoretical probability that the simulation should approach?

☐ A. $\frac{1}{8}$

☐ C. $\frac{3}{8}$

☐ B. $\frac{2}{8}$

☐ D. $\frac{4}{8}$

10) A toy car is $\frac{1}{10}$ the size of a real car. If the toy is 8 inches long, how long is the real car?

☐ A. 0.8 feet

☐ C. 6.67 feet

☐ B. 4 feet

☐ D. 80 inches



11) What is 50% of 180?

☐ A. 60

☐ C. 80

☐ B. 70

☐ D. 90

12) A toy costs \$20 at a store. The store adds an 8% sales tax. What is the final price?

☐ A. \$20.80

☐ C. \$22

☐ B. \$28

☐ D. \$21.60

13) Which expression represents “3 times a number k , minus 7”?

☐ A. $3(k - 7)$

☐ C. $7 - 3k$

☐ B. $3k - 7$

☐ D. $3 + k - 7$

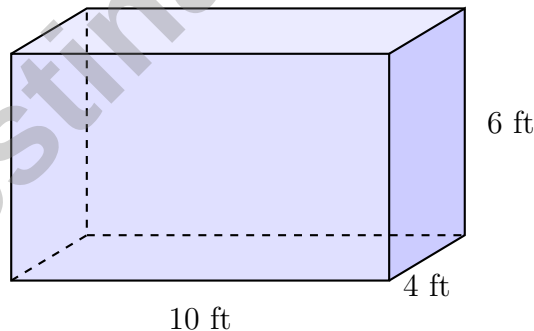
14) What is the GCF of $10a$ and $15ab$?

☐ A. $5a$

☐ C. $15a$

☐ B. $10a$

☐ D. $5ab$



15)

The colored isometric view represents a rectangular prism. Which calculation correctly finds its surface area?

☐ A. $2(10 + 6 + 4)$

☐ C. $2(10 \times 6 + 10 \times 4 + 6 \times 4)$

☐ B. $2(10 \times 6 \times 4)$

☐ D. $10 \times 6 \times 4$



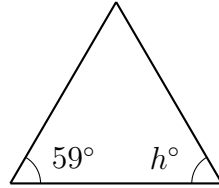
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- 1) A pizza place offers 3 types of crust, 6 sauce options, and 8 toppings. How many single-topping pizzas can be made?
- ☐ A. 17 ☐ C. 72
☐ B. 42 ☐ D. 144
- 2) A car travels 240 miles in 4 hours. What is the car's average speed? Estimate to check reasonableness.
- ☐ A. 50 mph ☐ C. 80 mph
☐ B. 60 mph ☐ D. 120 mph
- 3) A photograph is scaled down by a factor of $\frac{1}{4}$. If the original photograph is 8 inches wide, what is the width of the scaled version?
- ☐ A. 1 inch ☐ C. 4 inches
☐ B. 2 inches ☐ D. 6 inches
- 4) A model train layout is created at scale 1 cm : 0.25 m. A rectangular section of track measures 12 cm $\times$ 20 cm in the model. If the scale is changed to 1 cm : 0.5 m and the model is redrawn, what will be the area of the new model section in square centimeters?
- ☐ A. 60 cm² ☐ C. 240 cm²
☐ B. 120 cm² ☐ D. 480 cm²



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5)



A triangle is formed with one angle of 59° at the bottom left and another angle h at the bottom right. The top angle is 62° . What is h ?

☐ A. 28° ☐ C. 62° ☐ B. 59° ☐ D. 121°

6) A basketball court has a circular free-throw line with diameter 12 feet. To the nearest foot, what is the circumference? Use $\pi \approx 3.14$.

☐ A. 19 ft☐ C. 113 ft☐ B. 75 ft☐ D. 38 ft

7) A cylindrical pasta jar has a radius of 5 cm and a height of 15 cm. What is the surface area of the jar (including both circular ends)? Use $\pi \approx 3.14$.

☐ A. 471 cm^2 ☐ C. 785 cm^2 ☐ B. 628 cm^2 ☐ D. 1256 cm^2

8) A back-to-back stem-and-leaf plot compares the heights of two basketball teams. The stem represents tens of inches. For Team A, stem 7 has leaves 0, 2, 4, 6 (on the left). For Team B, stem 7 has leaves 1, 3, 5, 8 (on the right). How many players are in the 70–79 inch range in total?

☐ A. 4 players☐ C. 12 players☐ B. 8 players☐ D. 16 players

- 1) A scuba diver is at a depth of -45 feet (below sea level). She ascends 15 feet. What is her new depth?

- ☐ A. -60 feet ☐ C. 30 feet
☐ B. -30 feet ☐ D. 60 feet

2)

Letter	A	B	C	D
Probability	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$

Which outcome is most likely?

- ☐ A. A ☐ C. C
☐ B. B ☐ D. D
- 3) A real estate agent earns commissions on home sales. Last month, she earned \$8,000 in commission at a 2% rate. What was the total value of homes she sold?
- ☐ A. \$160,000 ☐ C. \$240,000
☐ B. \$200,000 ☐ D. \$400,000
- 4) A youth savings account at a bank earns 1.25% annual interest and charges no monthly fee. Your account balance is \$800. Approximately how much interest will you earn in one year?
- ☐ A. \$8 ☐ C. \$12
☐ B. \$15 ☐ D. \$10



- 5) A proportional relationship is shown by a line through the origin and (4, 6). What is the constant of proportionality?

- 6) An account earns 12% interest compounded annually. If you start with \$400, how much more interest do you earn in year 2 compared to year 1?

- ☐ A. \$0 (same each year) ☐ C. \$53.76
☐ B. \$96 ☐ D. \$5.76

- 7) The value of a car decreased from \$24 000 to \$18 000. What is the percent decrease?

- ☐ A. 33% ☐ C. 16.7%
☐ B. 20% ☐ D. 25%

- 8) Which statement is TRUE about the expression $6ab + 3ba$?

- ☐ A. They are not like terms because of different order. ☐ C. Like terms must have variables in the same order.
☐ B. They simplify to $9ab$. ☐ D. The terms cannot be combined.

9)

Number of Heads	0	1	2	3	Total
Frequency	12	36	37	15	100

A coin is flipped 3 times in each trial, and this is repeated 100 times. The table shows the number of heads per trial. What is the estimated probability of getting exactly 2 heads in three flips?

- ☐ A. 0.27 ☐ C. 0.37
☐ B. 0.35 ☐ D. 0.40



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North Carolina EOG Grade 7 Practice Test Answer Keys**How to use this section with a Grade 7 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next North Carolina EOG practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.NS.1-7.NS.3) Deduction: $-3 \times 6 = -18$ points.
- 2) **Choice A is correct.** (7.RP.3) The correct formula requires the actual value in the denominator. This student placed the estimate (28) in the denominator instead. Correct: $\frac{|28-35|}{35} \times 100\% \approx 20\%$. Student's incorrect answer: $\frac{|28-35|}{28} \times 100\% = 25\%$.
- 3) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute 4 to both terms: $4(2x) - 4(3) = 8x - 12$. (Positive times negative gives negative.)
- 4) **Choice A is correct.** (7.EE.4b) $y \leq -3$ includes the value -3 , so a closed circle, with the arrow pointing left.
- 5) **Choice D is correct.** (7.RP.3) $270 = 3000 \times r \times 2 \Rightarrow 270 = 6000r \Rightarrow r = 0.045 = 4.5\%$.
- 6) **Choice A is correct.** (7.NS.1b) Subtract the smaller absolute value from the larger: $|12| - |-5| = 12 - 5 = 7$. The larger absolute value is positive, so the answer is 7.
- 7) **The correct answer is 25.** (7.NS.1-7.NS.3) Net change = final balance - initial balance = $-20 - (-45) = -20 + 45 = 25$ dollars. The account increased by 25 dollars (a net deposit of 25).
- 8) **Choice B is correct.** (7.EE.1) Combine: $(-4 + 6 - 5)m = -3m$.
- 9) **Choice C is correct.** (7.SP.5-7.SP.8) Outcomes with exactly two tails: TTH, THT, HTT. That is 3 out of 8 equally likely outcomes.
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) If the toy is $\frac{1}{10}$ the size, the real car is 10 times larger: $8 \times 10 = 80$ inches.
- 11) **Choice D is correct.** (7.RP.3) 50% of 180 is $0.50 \times 180 = 90$.
- 12) **Choice D is correct.** (7.RP.3) Tax = $0.08 \times 20 = \$1.60$. Final price = $20 + 1.60 = \$21.60$.
- 13) **Choice B is correct.** (7.EE.1-7.EE.2) Three times k is $3k$. Minus 7 gives $3k - 7$.
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 10 and 15 is 5. Both have a . The GCF is $5a$.
- 15) **Choice C is correct.** (7.G.4-7.G.6) The correct surface area formula for a rectangular prism is $SA = 2(lw + lh + wh)$, which matches option C.
- 16) **Choice C is correct.** (7.SP.1-7.SP.4) Random selection from a complete list ensures every household has an equal chance of selection, avoiding bias. Options A and D select households more likely to own pets; option B has voluntary response bias. Only option C produces a representative sample.
- 17) **Choice D is correct.** (7.NS.1-7.NS.3) $0.0056 = 5.6 \times 10^{-3}$ (proper form). Check: $56 \times 10^{-4} = 5.6 \times 10^{-3}$ (equiv.), $0.56 \times 10^{-2} = 5.6 \times 10^{-3}$ (equiv.), but $5.6 \times 10^{-2} = 0.056 \neq 0.0056$.
- 18) **Choice A is correct.** (7.EE.1-7.EE.2) Work left to right: $(4y + 7 + 3y - 2) - (2y + 1) = (7y + 5) - (2y + 1) = 7y + 5 - 2y - 1 = 5y + 4$.
- 19) **Choice A is correct.** (7.EE.4b) Subtract 3: $-\frac{x}{2} \geq 6$. Multiply by -2 and flip: $x \leq -12$.
- 20) **Choice C is correct.** (7.G.1-7.G.5) A plane parallel to a cube's face produces a square cross-section with side 5 cm. Perimeter = $4 \times 5 = 20$ cm.
- 21) **Choice C is correct.** (7.G.1-7.G.5) On the line $y = x$, the x - and y -coordinates are equal. Only $(3, 3)$ satisfies this.
- 22) **The correct answer is B,D.** (7.SP.1-7.SP.4) Total is $280 + 420 + 100 = 800$. Online: $280/800 = 0.35 = 35\%$, so B is correct. In-store: $420/800 = 0.525 = 52.5\%$, so D is correct. A is wrong (not exactly 50%). C is wrong ($100/800 = 12.5\%$, not 10%).
- 23) **Choice A is correct.** (7.G.1-7.G.5) The area ratio is $\frac{48}{12} = 4$. Since area scales by (scale factor)², we have (scale factor)² = 4, so scale factor = 2.
- 24) **Choice B is correct.** (7.G.4-7.G.6) The area formula requires squaring the radius: $A = \pi r^2 = 3.14 \times (1.5)^2$. Option A skips squaring. Option D is the circumference formula. Option C is incorrect.
- 25) **Choice D is correct.** (7.SP.1-7.SP.4) Steady-Grow: mean (31) < median (32), indicating low outliers; IQR = 3 shows tight clustering. Fast-Grow: mean (32) > median (31), meaning some plants grew much taller than the typical height, pulling the mean up (right skew); IQR = 8 shows much wider spread. Steady-Grow is more consistent overall.
- 26) **Choice D is correct.** (7.RP.1-7.RP.3) The constant ratio is $\frac{25}{5} = 5$, $\frac{40}{8} = 5$, $\frac{50}{10} = 5$. So $p = 5m$.



Hi, Momentum Builder!

◇ Finishing a Grade 7 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 3 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 7 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** full-length Math practice tests and **2** online tests to help Grade 7 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 Answers & 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



Build Confidence

Practice regularly to feel prepared and test-ready.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Detailed Answers & Explanations

Learn from clear explanations and step-by-step solutions.



Improve Test Performance

Apply your knowledge and achieve your best score!

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

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