5 Full-Length North Carolina NC EOG Grade 6 Math Practice Tests

Extra Practice for Test Day Success

Dr. A. Nazari

5 Practice Tests to Map Your Math Skills!

Welcome, Math Explorer! 🧭

*This book is your map through **5 full practice tests**, each one a new trail through every Grade 6 topic — from ratios and integers to geometry and statistics.*

Discover what you already know!

Explore the topics that need more work!

Chart your path to test-day confidence!

Every explorer needs a plan. Let's start mapping yours!

🌱

> *Five tests means five chances to discover something new about your math skills. Enjoy the journey!*

🧭 *Your Exploration Guide* 🧭

Five trails to discover, five weeks to grow

🗺️ *What's Inside This Book*

- **5 Full-Length Practice Tests** — *each covers all Grade 6 topics: ratios, integers, expressions, geometry, and statistics.*

- **Detailed Answer Explanations** — *understand the why behind every answer, not just the what.*

- **Formula Reference Sheet** — *your trusty map of key formulas.*

- **Explorer's Log** — *chart your scores and track discoveries!*

🧭 *Your 5-Week Exploration Schedule*

One test per week keeps the journey manageable:

Trail 1:   *Take Test 1 untimed. Explore the terrain and note what you find.*

Trail 2:   *Review weak spots. Take Test 2 with a gentle timer (75 min).*

Trail 3:   *Test 3 timed (60 min). Compare with Test 1 — see the progress!*

Trail 4:   *Deep-focus on remaining tricky topics. Test 4 timed.*

Trail 5:   *Full test conditions. Your final exploration — celebrate the finish!*

⚪ *Multiple Choice*

*Choose the **best answer** from A, B, C, or D.*

🔭 **Explorer's tip:** *Read every option before deciding. The correct answer sometimes hides in the last choice!*

✏️ *Open Response*

***Show your work** and write your answer clearly.*

🔭 **Explorer's tip:** *Think of your solution as a trail map — show every step so someone else could follow your path!*

❝ *After Each Trail* ❞

*Check the Answer Key and read every explanation — especially for questions you missed. Write the tricky topics in your Explorer's Log. If you need a deeper dive, grab our **Grade 6 Math Study Guide**!*

🔭 The Explorer's Toolkit 🔭

Essential strategies for navigating every test

📕 Pack Your Gear (Before the Test)

✔ Clear your workspace — remove distractions. ✔ Gather pencils, eraser, scratch paper. ✔ Take 3 deep breaths. ✔ Set your goal: "I'll read carefully and show my work."

🧭 Navigate the Trail (During the Test)

1. **Scout first.** Flip through the test to see what's ahead.
2. **Start with what you know.** Answer confident questions first.
3. **Mark the unknowns.** Put a 🚩 by tricky ones and return later.
4. **Show every step.** Your solution path matters as much as the answer.
5. **Check the map.** Does your answer make sense in context?

🧭 Navigation Tips by Topic

- **Ratios:** Set up a proportion and cross-multiply
- **Integers:** Use a number line to check signs
- **Expressions:** Follow PEMDAS step by step
- **Equations:** Inverse operations to isolate x
- **Geometry:** Draw and label diagrams
- **Statistics:** Order data before finding median

⚠ Trail Hazards

- Confusing ratio $3:5$ with $\frac{3}{5}$
- Wrong signs when adding integers
- Forgetting exponents in PEMDAS
- Mixing up area formulas
- Reading the wrong axis
- Finding mean instead of **median**

Explorer's Debrief: After each test, go through the answer key carefully. For every wrong answer, ask: did I make a careless mistake, or do I need to study this topic more? Write your findings in the Explorer's Log. That's how real explorers improve — they learn from every expedition!

🧳 *Pack Your Explorer's Kit* 🧳

Gather everything you need before each expedition

🧭 *Your Expedition Gear*

- ☑ **Two sharpened pencils** *so you never have to stop mid-trail*

- ☑ **A good eraser** *every explorer course-corrects!*

- ☑ **Scratch paper** *for drawing diagrams and working out steps*

- ☑ **A quiet workspace** *your base camp for concentration*

- ☑ **A timer** *start using around Trail 3*

- ☑ **Curiosity and confidence!** *the explorer's greatest tools*

👍 *Allowed on Real Tests*

- ✔ *Pencil and eraser*
- ✔ *Scratch paper (provided)*
- ✔ *Ruler (if specified)*
- ✔ *Reference sheets (in this book)*

👎 *Not Allowed*

- ✘ *Calculator*
- ✘ *Phone or tablet*
- ✘ *Textbooks or notes*
- ✘ *Help from others*

👥 *For Parents & Teachers*

- ● *Spread the 5 tests across* **5 weeks** *for best results. This gives time to review and study between expeditions.*

- ● *Test 1 should be untimed to establish a baseline.*

- ● *After each test, review the Answer Key together. Focus on* **reasoning**, *not just scores.*

- ● *Pair this book with our* **Grade 6 Math Study Guide** *for topics that need extra attention.*

- ● *Celebrate progress — every improvement, no matter how small, is a discovery worth noting!*

Formula Reference Sheet

🔺 Area Formulas

Rectangle $\quad A = l \times w$

Parallelogram $\quad A = b \times h$

Triangle $\quad A = \dfrac{1}{2} \times b \times h$

Trapezoid $\quad A = \dfrac{1}{2}(b_1 + b_2) \times h$

📦 Volume

Rectangular $\quad V = l \times w \times h$

Prism

🟪 Surface Area

Find the area of each face, then add them all up.

Rectangular Prism:

$SA = 2lw + 2lh + 2wh$

↓ Order of Operations

P   Parentheses first

E   Exponents

M/D Multiply & Divide (left to right)

A/S Add & Subtract (left to right)

﹪ Ratios & Percents

Ratio: $a : b$ or $\dfrac{a}{b}$

Unit rate: amount per 1 unit

Percent: a ratio out of 100

$Part = Percent \times Whole$

⚖️ Integers & Absolute Value

Integers:

$\dots, -3, -2, -1, 0, 1, 2, 3, \dots$

$|-5| = 5 \quad |5| = 5$

Absolute value = distance from 0

X¹ Expressions & Equations

Exponent: $3^4 = 3 \times 3 \times 3 \times 3 = 81$

Variable: a letter that stands for a number

Equation: two expressions joined by $=$

Inequality: uses $<, >, \leq, \geq$

⊕ Coordinate Plane

Ordered pair: (x, y)

x-axis: horizontal y-axis: vertical

Origin: $(0, 0)$

Four quadrants (I, II, III, IV)

📊 Statistics

Mean: sum of values $\div$ count

Median: middle value (sorted)

Range: $max - min$

🧭 My Explorer's Log 🧭

Record each expedition's results and discoveries

Explorer's Name: _____

Trail	📅 Date	⭐ Score	🙂 Confidence
1	_____	_____ / _____	🙂
2	_____	_____ / _____	🙂
3	_____	_____ / _____	🙂
4	_____	_____ / _____	🙂
5	_____	_____ / _____	🙂

📎 My Discovery Journal

Topics I explored with confidence:

_____

_____

Uncharted territory (topics I need to study more):

_____

_____

My biggest improvement from Trail 1 → Trail 5:

_____

_____

One new strategy I discovered along the way:

_____

_____

One strategy that helped me the most:

_____

_____

⭐ Table of Contents ⭐

Here's what we'll explore together!

Let's learn and have fun!

1

Practice Test 1

📋 *30 Questions*

✏️ *Before You Start* ✏️

- ✔ ***Read each question carefully*** *before choosing your answer.*
- ✔ ***Show your work*** *on scratch paper when you need to.*
- ✔ ***Skip hard questions*** *and come back to them later.*
- ✔ ***Check your answers*** *when you're done.*
- ✔ ***Take your time*** *— there's no rush!*

★ *You've Got This!* ★

Do your best and show what you know!

1. A recipe calls for 4 cups of water **to** 1 cup of rice. If you use 3 cups of rice, how many cups of water do you need?

(A) 7

(B) 8

(C) 12

(D) 4

2. Ana types 225 words in 5 minutes. Ben types 180 words in 4 minutes. Who types faster?

(A) Ana, at 45 words per minute

(B) Ben, at 45 words per minute

(C) They type at the same speed.

(D) Ben, at 44 words per minute

3. A recipe uses 4 eggs for every 6 cups of flour. How many eggs are needed for 18 cups of flour?

(A) 6

(B) 10

(C) 12

(D) 8

4. A lemonade stand sells cups at $3 each. Which graph shows the correct relationship?

(A) A line through $(1, 3)$ and $(2, 5)$

(B) A line through $(1, 3)$ and $(2, 6)$

(C) A line through $(1, 3)$ and $(3, 6)$

(D) A line through $(3, 1)$ and $(6, 2)$

5. 60% of 45 is closest to which number?

(A) 25

(B) 27

(C) 30

(D) 36

6. A sprinter runs at 9 meters per second. What is her speed in kilometers per hour? ($1\ km = 1,000\ m$, $1\ hour = 3,600\ seconds$)

Your Answer:

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7. A student solved the problem below using "Keep, Change, Flip." Look at the student's work.

Problem: $\dfrac{4}{5} \div \dfrac{2}{3}$

Step 1: Keep $\dfrac{4}{5}$ Change $\div$ to $\times$

Step 2: Flip $\dfrac{4}{5}$ to get $\dfrac{5}{4}$

Step 3: $\dfrac{5}{4} \times \dfrac{2}{3} = \dfrac{10}{12} = \dfrac{5}{6}$

What error did the student make?

(A) The student forgot to change $\div$ to $\times$

(B) The student made a multiplication error in Step 3

(C) The student forgot to simplify

(D) The student flipped the wrong fraction

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8. Compute $9,072 \div 42$.

Your Answer:

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9. Which of the following statements about zero is true?

(A) Zero is a positive number.

(B) Zero is a negative number.

(C) Zero is neither positive nor negative.
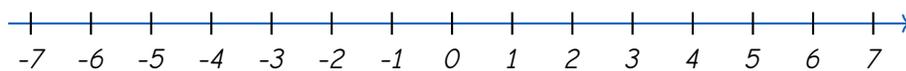
(D) Zero is both positive and negative.

10. *A point M is marked on the number line below.*

[M, above]-5

What number is the opposite of the value at point M?

(A) -5

(B) 0

(C) 5

(D) $-(-(-5))$

11. *Evaluate:* $(7 + 3) \times 2$
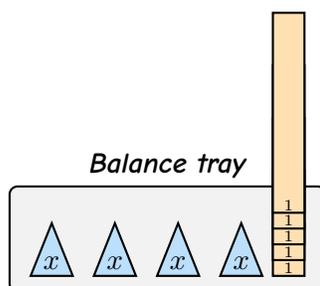
(A) 13

(B) 17

(C) 20

(D) 24

12. *Look at the balance model below. Each triangle represents the same unknown number x, and each small square represents 1. Write an expression for the total value shown on the balance.*

Balance tray

Your Answer:

13. Look at the expression map below. Which label correctly identifies Part C?

$$\underbrace{5}_{A}\underbrace{x}_{B} + \underbrace{3}_{C}$$

(A) A variable

(B) A coefficient

(C) A constant

(D) A factor

14. Evaluate $6x - x^2$ when $x = 4$.

(A) 8

(B) 20

(C) -8

(D) 40

15. Which expression is equivalent to $10a - 2a + 7$?

(A) $12a + 7$

(B) $8a + 7$

(C) $8a - 7$

(D) $15a$

16. A school has s students and wants to form teams of 6. Which expression gives the number of teams?

(A) $6s$

(B) $s + 6$

(C) $s \div 6$

(D) $s - 6$

17. Solve: $m + 17 = 30$

Your Answer:

18. *The table below matches phrases to inequality symbols. Which row has an error?*

Row	Phrase	Symbol
1	At least	$\geq$
2	No more than	$\leq$
3	Fewer than	$<$
4	At most	$<$

(A) *Row 1*

(B) *Row 2*

(C) *Row 3*

(D) *Row 4*

19. *Pick two values that ARE solutions to $x > -1$ and one value that is NOT.*

Your Answer:

20. *What is the area of a triangle with base 10 cm and height 6 cm?*
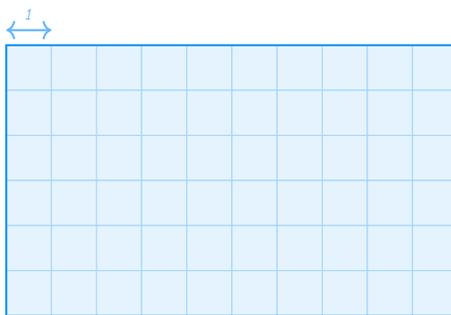

(A) $60\ cm^2$

(B) $30\ cm^2$

(C) $16\ cm^2$

(D) $32\ cm^2$

21. *What is the area of a trapezoid with bases* 6 *in and* 10 *in and height* 4 *in?*

$\overset{1}{\longleftrightarrow}$

(A) $32 \ in^2$ (B) $20 \ in^2$

(C) $60 \ in^2$ (D) $40 \ in^2$

22. *A box has a volume of* $72 \ in^3$. *The base is* 6 *in by* 4 *in. What is the height?*

(A) $2 \ in$ (B) $3 \ in$

(C) $6 \ in$ (D) $12 \ in$

23. *Points* $A(-1, -4)$ *and* $B(-1, 8)$ *form a vertical segment. What is its length?*

Your Answer:

24. *A rectangle has vertices* $(-3, 2)$, $(5, 2)$, $(5, -4)$, *and* $(-3, -4)$. *What is the area?*

(A) 24 *square units*   (B) 36 *square units*

(C) 48 *square units*   (D) 28 *square units*

25. *Write a statistical question you could ask your classmates about food.*

Your Answer:

26. *Two students collected data. Student A: range = 5. Student B: range = 40. Whose data is more consistent?*

Your Answer:

27. *Data:* $5, 5, 5, 5, 5$. *What are the mean and median?*

(A) *Mean $= 5$, Median $= 0$*

(B) *Mean $= 0$, Median $= 5$*

(C) *Mean $= 5$, Median $= 5$*

(D) *Mean $= 25$, Median $= 5$*

28. *A dot plot of students' shoe sizes shows a cluster from size 6 to size 8, with a gap at size 10 and one dot at size 12. What is the dot at size 12?*

(A) *A cluster*

(B) *A gap*

(C) *A peak*

(D) *An outlier*

29. *Data (in order):* $10, 15, 20, 25, 30, 35, 40$. *Find the five-number summary.*

Your Answer:

30. The table below shows statistics for two basketball teams this season.

	Team A	Team B
Mean points	72	70
MAD	8	3

Team A scored more on average. But which team would you trust more in a close game? Why?

(A) Team A, because they score higher on average.

(B) Team B, because their scores are more predictable (smaller MAD).

(C) Team A, because a higher MAD means more exciting games.

(D) Both teams are equally trustworthy.

⭐ *End of Practice Test 1* ⭐

Great job finishing the test!

☑ *My Score*

I got _____ out of 30 questions right.

*Check your answers in the **Answer Key** at the back of the book.*

💡 *Review any questions you missed. That's how we learn!*

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