

# 5 Full-Length North Dakota NDSA Grade 6 Math Practice Tests

*Extra Practice for Test Day Success*

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EXPLORER'S JOURNEY

# 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!***

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# 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

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## Area Formulas

**Rectangle**  $A = l \times w$

**Parallelogram**  $A = b \times h$

**Triangle**  $A = \frac{1}{2} \times b \times h$

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

## Volume

**Rectangular Prism**  $V = l \times w \times h$

**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  $\frac{a}{b}$

**Unit rate:** amount per 1 unit

**Percent:** a ratio out of 100

$$\text{Part} = \text{Percent} \times \text{Whole}$$

## Integers & Absolute Value

**Integers:**

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

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

**Absolute value** = distance from 0

## 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:*

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*Uncharted territory (topics I need to study more):*

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*My biggest improvement from Trail 1 → Trail 5:*

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*One new strategy I discovered along the way:*

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*One strategy that helped me the most:*

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## ★ Table of Contents ★

*Here's what we'll explore together!*

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*Let's learn and have fun!*

PREVIEW



PRACTICE TEST

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



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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:

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

**Problem:**  $\frac{4}{5} \div \frac{2}{3}$

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

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

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

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

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

Your Answer:

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.



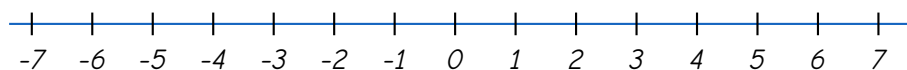
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10. A point  $M$  is marked on the number line below.



$[M, \text{above}]-5$

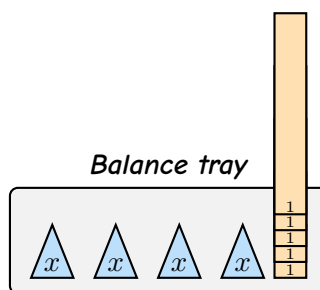
What number is the opposite of the value at point  $M$ ?

- (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.



Your Answer:



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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:



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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)  $60 \text{ cm}^2$

(B)  $30 \text{ cm}^2$

(C)  $16 \text{ cm}^2$

(D)  $32 \text{ cm}^2$



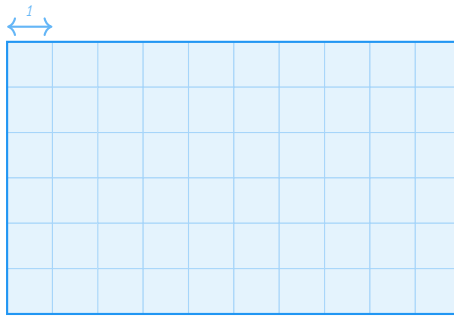
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21. What is the area of a trapezoid with bases 6 in and 10 in and height 4 in?



- (A)  $32 \text{ in}^2$  (B)  $20 \text{ in}^2$   
(C)  $60 \text{ in}^2$  (D)  $40 \text{ in}^2$

22. A box has a volume of  $72 \text{ in}^3$ . 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



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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:



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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.



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## ★ 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!*

THANK YOU

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### Get the Full Book!

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