

# 7 North Dakota NDSA

## 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

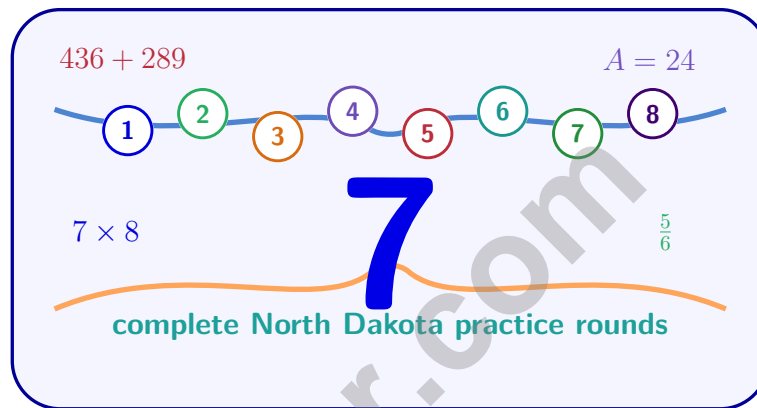
 PRACTICE WITH PURPOSE

 STRENGTHEN MATH SKILLS

 REVIEW, IMPROVE, AND SUCCEED

# 7 North Dakota NDSA Grade 6 Math Practice Tests

*Standards-Aligned Northern Plains Test Focus for North Dakota State Assessment*



Seven complete 40-question Grade 6 practice rounds for NDSA, built for northern plains test focus 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 Dakota Math Explorer!

Eight focused rounds using northern plains test focus

This book gives you seven full Grade 6 practice tests for NDSA. Each round uses prairie roads, river breaks, and patient calculation 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 Dakota Practice Promise

Keep the work steady: read, set up, solve, and compare the answer to the question.

Read

Plan

Check

## How to Use This Book

A seven-session routine for northern plains test focus

1. **Preview the skills.** Scan the quick review pages before beginning the first round.
2. **Work in order.** Take one 40-question test at a time in a quiet place.
3. **Mark confidence.** Put a small star beside problems where your plan felt strong.
4. **Correct actively.** Retry missed items before reading the full explanation.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

**North Dakota review rhythm:** Use each test as a field note, then practice the skills that need the most attention.



## What Is Inside?

Eight NDSA 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. Northern plains test focus means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!  
For more practice  
& answers

# Table of Contents

|   |       |            |
|---|-------|------------|
| ★ Practice Test 1                             | _____ | 14         |
| ★ Practice Test 2                             | _____ | 30         |
| ★ Practice Test 3                             | _____ | 46         |
| ★ Practice Test 4                             | _____ | 61         |
| ★ Practice Test 5                             | _____ | 76         |
| ★ Practice Test 6                             | _____ | 92         |
| ★ Practice Test 7                             | _____ | 107        |
| <b>Practice Test Answer Keys</b>              | _____ | <b>124</b> |
| <b>Practice Test Answers and Explanations</b> | _____ | <b>129</b> |

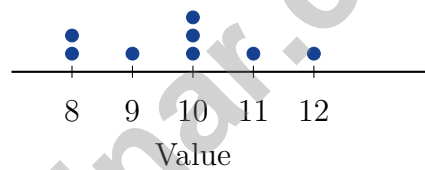
1) Which term has a coefficient of  $\frac{2}{3}$ ?

- A.  $\frac{2}{3}$   
 B.  $\frac{2}{3}r$

- C.  $2r + 3$   
 D.  $r + \frac{2}{3}$

2) Evaluate  $4^3$ .

3) A dot plot shows the values 8, 8, 9, 10, 10, 10, 11, 12. If you remove one value of 10, how does the mean change?



- A. The mean decreases  
 B. The mean stays the same  
 C. The mean increases  
 D. The mean becomes zero



- 4) A survey asks students: "How many hours of homework per week?" Two students analyzed the results differently:

| Statistic | Student X says | Student Y says |
|-----------|----------------|----------------|
| Mean      | 8 hours        | 8 hours        |
| Median    | 8 hours        | 8 hours        |
| Std Dev   | 2 hours        | 5 hours        |

What is the key difference in their interpretations?

- A. Student X's data is more spread out  
 B. Student Y's data is more spread out  
 C. Both datasets have identical variability  
 D. The standard deviation doesn't affect interpretation
- 5) A bag contains 3 red marbles, 5 blue marbles, and 2 green marbles. If one marble is drawn at random, what is the probability that it is blue?

- A.  $\frac{1}{10}$   
 B.  $\frac{1}{5}$   
 C.  $\frac{1}{2}$   
 D.  $\frac{5}{8}$

- 6) A fitness app records heart rates (bpm). The stem-and-leaf plot shows:

| Stem | Leaf          |
|------|---------------|
| 6    | 8             |
| 7    | 2, 4, 6, 8    |
| 8    | 1, 3, 5, 7, 9 |
| 9    | 0, 2          |

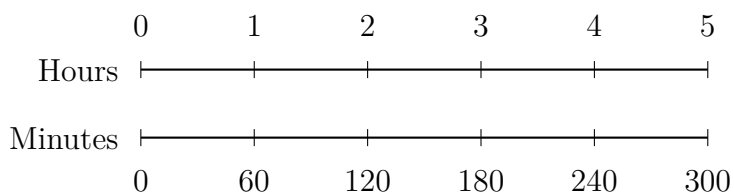
Which range contains the most recorded heart rates?

- A. 80 – 89 bpm  
 B. 70 – 79 bpm  
 C. 60 – 69 bpm  
 D. 90 – 99 bpm



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1)

Based on the double number line, what is the rate in minutes per hour?

- A. 30 minutes per hour
- B. 60 minutes per hour
- C. 90 minutes per hour
- D. 150 minutes per hour

2) A pencil is 150 millimeters long. How many centimeters long is the pencil? (Use 1 centimeter = 10 millimeters.)

- A. 15 cm
- B. 1500 cm
- C. 1.5 cm
- D. 150 cm

3) Alina earns \$400 each month. She saves 15% of her income for college. How much does she save each month?

- A. \$15
- B. \$40
- C. \$60
- D. \$85

4) Which of the following does NOT represent a proportional relationship?

|                     |   |    |    |
|---------------------|---|----|----|
| <b>x</b>            | 2 | 4  | 6  |
| <b>y (option A)</b> | 6 | 12 | 18 |
| <b>y (option B)</b> | 4 | 7  | 10 |

- A. Option A
- B. Option B
- C. Both A and B
- D. Both are proportional



- 1) Write an expression for “a number  $w$  tripled and then increased by 10”.
- A.  $3(w + 10)$                        C.  $w + 3 + 10$   
 B.  $3w + 10$                        D.  $3 + w + 10$
- 2) A  $10 \times 10$  grid has 35 shaded squares. What percent of the grid is shaded?
- A. 3.5%                       C. 65%  
 B. 35%                       D. 350%
- 3) Sarah is 64 inches tall. How many feet tall is Sarah? (Use 1 foot = 12 inches.)
- A.  $5\frac{1}{3}$  feet                       C. 5 feet  
 B.  $6\frac{1}{2}$  feet                       D. 7 feet
- 4) A bank account starts with \$1000 and earns 5% simple interest per year. After how many years will the account have earned \$250 in interest?
- A. 3 years                       C. 6 years  
 B. 4 years                       D. 5 years
- 5) How many quadrants have points with at least one positive coordinate?
- A. 1                       C. 3  
 B. 2                       D. 4
- 6) Which ratio is equivalent to 5 : 15?
- A. 1 : 2                       C. 10 : 30  
 B. 5 : 10                       D. 1 : 3



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7) A bakery bakes cookies in batches. Each batch uses 12 cups of flour and 8 cups of sugar. What is the simplified ratio of flour to sugar?

A. 2 : 3

C. 12 : 8

B. 6 : 4

D. 3 : 2

8) A coordinate plane shows points representing a proportional relationship between yards and meters. One point is (3, 2.74) and another is (6, 5.48).

Are these points on the same proportional line? Which statement is correct?

A. No, because the x-coordinates are different

C. No, because both coordinates must be whole numbers

B. No, because the y-coordinates are different

D. Yes, because  $\frac{2.74}{3} \approx \frac{5.48}{6} \approx 0.91$

9)

| Store   | Original Price | Sale Price |
|---------|----------------|------------|
| Store A | \$50           | \$40       |
| Store B | \$60           | \$42       |

Which store offers the larger percent discount?

A. Store A (20% off)

C. Store A (30% off)

B. Store B (30% off)

D. Both offer the same discount

10) If  $\frac{4}{6} = \frac{x}{15}$ , what is the value of  $x$ ?

A. 8

C. 12

B. 18

D. 10



**North Dakota NDSA Practice Test Answer Keys**

**How to use this North Dakota NDSA 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 northern plains test focus
3. rework the problem before reading the full explanation, using this reminder:  
Keep the work steady: read, set up, solve, and compare the answer to the question.

**A calm North Dakota correction routine turns every missed item into useful practice. Use each test as a field note, then practice the skills that need the most attention.**



## North Dakota Practice Test Answers and Explanations

Review the seven printed NDSA tests with patient, focused, and ready for the next checkpoint habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(6.AR.EE.3)** The term  $\frac{2}{3}r$  has coefficient  $\frac{2}{3}$ . The other options either have no variable or have a different structure.
- 2) **The correct answer is 64.** **(6.AR.EE.1)**  $4^3 = 4 \times 4 \times 4 = 64$ .
- 3) **Choice A is correct.** **(6.DPS.D.4)** Original mean:  $(8 + 8 + 9 + 10 + 10 + 10 + 10 + 11 + 12)/8 = 9.75$ . After removing one 10:  $(8 + 8 + 9 + 10 + 10 + 11 + 12)/7 = 9.71$ . The mean decreases slightly.
- 4) **Choice B is correct.** **(6.DPS.D.1)** Same mean and median indicate similar centers, but Student Y's higher standard deviation (5 vs 2) shows much greater variability. Student Y's dataset has students doing anywhere from very little to very much homework; Student X's is more clustered around 8 hours.
- 5) **Choice C is correct.** **(6.NO.O.3)** Total marbles =  $3 + 5 + 2 = 10$ . Blue marbles = 5. Probability =  $\frac{5}{10} = \frac{1}{2}$ .
- 6) **Choice A is correct.** **(6.DPS.D.1)** Stem 8 has 5 leaves, which is more than any other stem. Thus, the 80 – 89 range contains the most heart rates.
- 7) **Choice B is correct.** **(6.NO.O.3)** 30% of 700 is  $0.30 \times 700 = 210$  items.
- 8) **Choice A is correct.** **(6.AR.RP.3)** The cost is \$2 per notebook. Check: 1 notebook costs \$2; 3 notebooks cost \$6. The equation is  $\text{Cost} = 2n$ .
- 9) **Choice A is correct.** **(6.AR.RP.2)** From  $A = \pi r^2$ , we get  $78.5 \approx 3.14 \times r^2$ , so  $r^2 \approx 25$ , thus  $r = 5$  cm.
- 10) **Choice A is correct.** **(6.AR.EE.4)** Substitute  $x = 6$  into the equation. Check:  $6 - 2 = 4$  is true.
- 11) **Choice A is correct.** **(6.AR.EE.6)** "At least \$0.50" means  $m \geq 0.50$ . "Less than \$2.00" means  $m < 2.00$ .
- 12) **Choice C is correct.** **(6.AR.EE.6)** "Fewer than 10" means strictly less than 10, so  $c < 10$ .
- 13) **Choice D is correct.** **(6.GM.AV.1)**  $A = \frac{1}{2} \times 30 \times 4 = 60 \text{ m}^2$ .
- 14) **Choice C is correct.** **(6.GM.AV.1)** Area =  $4.5 \times 2 = 9 \text{ m}^2$ . The slanted side is not the height.
- 15) **Choice D is correct.** **(6.GM.GF.2)** Length =  $6 - 1 = 5$  units; width =  $4 - 1 = 3$  units. Area =  $5 \times 3 = 15$  square units.
- 16) **Choice B is correct.** **(6.GM.AV.1)** Base:  $10 - 1 = 9$  units. Height:  $6 - 1 = 5$  units. Area =  $\frac{1}{2} \times 9 \times 5 = 22.5$  square units.
- 17) **The correct answer is 48.** **(6.AR.EE.2)** Substitute  $t = 3$ :  $4(3 + 9) = 4 \times 12 = 48$ .
- 18) **Choice B is correct.** **(6.GM.GF.3)** In a 1-2-3-4 horizontal line with extensions above 2 and 3, face 1 is at one end. When folded, face 4 (at the opposite end) becomes the bottom of the cube. Faces 5 and 6 (the extensions) become side faces.
- 19) **Choice C is correct.** **(6.AR.RP.4)**  $78 \div 3 = 26$  miles per gallon.
- 20) **The correct answer is Both B and C involve subtracting a negative integer..** **(6.AR.RP.3)** B is correct:  $-50 - (-10) = -50 + 10 = -40$ . The diver removes (subtracts) the negative anchor. C is correct:  $8 - (-3) = 8 + 3 = 11^\circ$ , the change from 8 to  $-3$  is a drop of 11 degrees. A is wrong: it's adding, not subtracting a negative. D is wrong: it's adding two negatives. E is subtraction but the debt/profit wording is contextually unclear.
- 21) **The correct answer is 12.** **(6.AR.EE.3)** Substitute:  $2(4 + 5) - 3(2) = 2(9) - 6 = 18 - 6 = 12$ .
- 22) **Choice D is correct.** **(6.AR.RP.3)** First three rows:  $3 : 9 = 1 : 3$ ,  $5 : 15 = 1 : 3$ ,  $7 : 21 = 1 : 3$  (consistent). Fourth row:  $6 : 17 \neq 1 : 3$  (inconsistent). The consistent ratio is  $1 : 3$ .
- 23) **Choice A is correct.** **(6.AR.RP.4)**  $\frac{7}{20} = \frac{35}{100} = 0.35 = 35\%$  (multiply numerator and denominator by 5).
- 24) **Choice C is correct.** **(6.DPS.D.4)** According to the bar chart, the Food category is labeled as \$480.
- 25) **Choice C is correct.** **(6.NO.NS.2)**  $R = 1$  and  $S = 5$ , so  $1 < 5$ . Note:  $S - R = 4$ , not 3.



Scan me!  
For more practice  
& answers

## Hi, Math Pilot!

◇ 7 flights done in your math airplane. You have flown through smooth skies and bumpy clouds. You are a real pilot now. ◇

★ **Pilots know:** a good check before takeoff makes a smooth flight. Before each problem, do your check: read, plan, solve, verify. ★

### Pilot Skills

- **Pre-Flight:** You read the question carefully.
- **Steering:** You pick the right strategy.
- **Smooth Flight:** You stay calm in long tests.
- **Landing:** You always check your final answer.

**Pilot tip:** on test day, take off one problem at a time. Trust your training. You earned your wings!

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 Pilot

# 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