

8

North Dakota

NDSA

GRADE 7

MATH

PRACTICE TESTS



**Standards Aligned
Problem Solving**

For Comprehensive
Assessment Programs



8 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 SKILLS



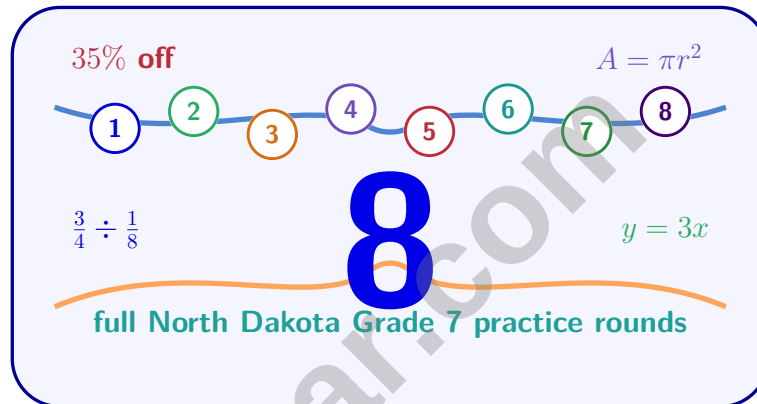
THINK SMARTER



BE TEST-READY

8 North Dakota NDSA Grade 7 Math Practice Tests

A careful review of North Dakota Grade 7 ratios, percent change, expressions, geometric construction, circle graphs, and probability



Eight complete 40-question Grade 7 NDSA 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 Dakota Grade 7 Problem Solver!

Eight focused rounds for sharper NDSA math thinking

This book gives you eight full Grade 7 NDSA 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 Dakota 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

An eight-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 Dakota 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?

Eight NDSA tests, 320 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Tests 7–8	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
Answer Pages	Compact keys and explanations that show why each answer works.

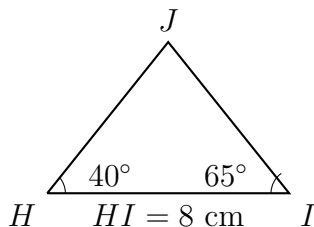
The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1)

Triangle $H I J$ has base $H I = 8$ cm, $\angle H = 40^\circ$, and $\angle I = 65^\circ$. Is this triangle uniquely determined?

- ☐ A. No, infinitely many triangles fit ☐ C. Yes, by SAS (Side–Angle–Side)
☐ B. Yes, by AAS (Angle–Angle–Side) ☐ D. No, we need the third angle

2) Which expression represents “the product of 5 and a number n , decreased by 7”?

- ☐ A. $7 - 5n$ ☐ C. $5n - 7$
☐ B. $5(n - 7)$ ☐ D. $5 + n - 7$

3) Evaluate $-72 \div 8$.

- ☐ A. -9 ☐ C. 8
☐ B. -8 ☐ D. 9

4) A bakery divides $\frac{5}{8}$ pound of flour equally among 4 batches. How much flour is in each batch?

- ☐ A. $\frac{5}{32}$ pound ☐ C. $\frac{1}{8}$ pound
☐ B. $\frac{5}{12}$ pound ☐ D. $\frac{5}{4}$ pounds



5) What is the value of $(-2)^3$?

☐ A. 6

☐ C. 8

☐ B. -8

☐ D. 9

6) A baker makes cookies. She sells mini-cookies for \$0.50 each and bundles of 12 for \$5. Which expression shows the cost of 3 bundles and 8 individual cookies?

☐ A. $3 + 8(5 + 0.50) = \$46.50$

☐ C. $5(3) + 0.50 + 8 = \$23.50$

☐ B. $(3 + 8)(5) = \$55$

☐ D. $3(5) + 8(0.50) = \$19$

7) Solve for x : $5(x - 4) = 45$

☐ A. $x = 5$

☐ C. $x = 13$

☐ B. $x = 9$

☐ D. $x = 17$

Start: $5x - 10 = 40$

After Step 1: $5x = 50$

After Step 2: $x = 10$

8)

What operation was used in Step 1?

☐ A. Add 10

☐ C. Multiply by 10

☐ B. Subtract 10

☐ D. Divide by 10



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9) Convert 0.75 to a fraction in simplest form.

- ☐ A. $\frac{3}{4}$
☐ B. $\frac{7}{9}$

- ☐ C. $\frac{75}{100}$
☐ D. $\frac{3}{5}$

10) What is $\sqrt{169}$?

- ☐ A. 12
☐ B. 13

- ☐ C. 14
☐ D. 15

11) A family's monthly expenses total \$2,500. If their monthly income is \$3,000, what percentage of their income do they spend?

12) A fitness tracker shows a person burned 450 calories on Monday, 510 on Tuesday, and 495 on Wednesday. If the person wants an average of 500 calories per day over 4 days, how many calories must they burn on Thursday?

- ☐ A. 545 calories
☐ B. 500 calories

- ☐ C. 535 calories
☐ D. 485 calories

13) In the number 0.0089, what coefficient appears when converted to scientific notation?

- ☐ A. 0.89
☐ B. 8.9

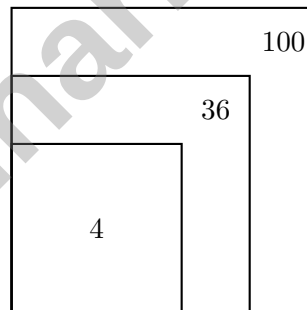
- ☐ C. 89
☐ D. 890



- 1) A company measured customer satisfaction in two different random samples. Sample 1 ($n = 50$) reported 70% satisfaction. Sample 2 ($n = 200$) also reported 70% satisfaction. Which statement is most accurate?

- ☐ A. Sample 1 is more reliable because it found a higher percentage
- ☐ B. Sample 2 provides a more reliable estimate due to its larger size
- ☐ C. Both samples are equally reliable since they show the same proportion
- ☐ D. Neither sample is large enough to estimate the population

- 2) A photograph is enlarged from 4 inches wide by 6 inches tall to 10 inches wide. How tall is the enlarged photograph?



3)

Based on the areas shown, what are the side lengths?

- ☐ A. 2, 6, 10
- ☐ B. 2, 6, 12
- ☐ C. 2, 8, 10
- ☐ D. 4, 6, 10



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4) A student earns \$8.50 per hour and works 4.5 hours. How much does the student earn?

☐ A. \$38.25

☐ C. \$35.75

☐ B. \$40.50

☐ D. \$42.50

5) Which value is equivalent to 3.7×10^{-6} ?

☐ A. 0.0000037

☐ C. 3,700,000

☐ B. 0.00000037

☐ D. 37,000,000

6) A store owner tracks inventory. She started with $(15x + 20)$ units. After selling $(8x - 5)$ units, how many units remain?

Start: $(15x + 20)$ units

Sold: $(8x - 5)$ units

Remain: ?

☐ A. $7x + 25$

☐ C. $7x + 15$

☐ B. $23x + 15$

☐ D. $7x - 25$

7) A random number generator produces a number from 1 to 20. What is the probability that the number is prime?

☐ A. $\frac{1}{4}$

☐ C. $\frac{2}{5}$

☐ B. $\frac{7}{20}$

☐ D. $\frac{1}{2}$



1) A dataset has minimum 28 and maximum 94. If you create a stem-and-leaf plot with single-digit stems, how many stems are required?

☐ A. 6

☐ C. 8

☐ B. 7

☐ D. 9

2) Solve: $2(x + 3) = 14$

☐ A. $x = 2$
☐ C. $x = 4$
☐ B. $x = 3$
☐ D. $x = 7$

3) A weather model predicts: $P(\text{rain}) = 0.3$, $P(\text{cloudy}) = 0.5$, $P(\text{sunny}) = 0.2$. Which statement is true?

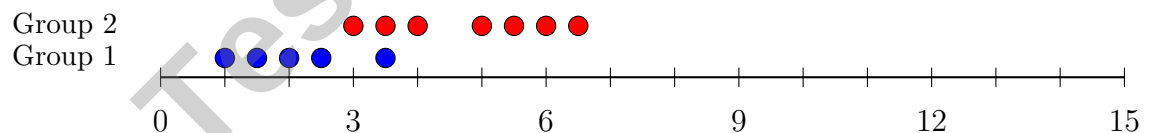
☐ A. This is a valid non-uniform probability model.

☐ C. The probabilities do not sum to 1.

☐ B. This is a valid uniform probability model.

☐ D. $P(\text{not sunny}) = 0.3$.

4) The dot plots below show the number of text messages sent by two groups of students during a school day.



Which group has a higher center (median)?

☐ A. Group 1

☐ D. Cannot be determined from the plot

☐ B. Group 2

☐ C. Both groups have the same median


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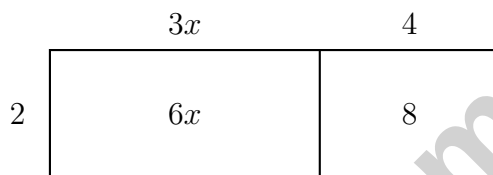
5) Item Cost Estimates

Item	Estimated Cost	Actual Cost
Shirt	\$22	\$20

What is the percent error for the shirt cost estimate?

- ☐ A. 91% ☐ C. 11%
☐ B. 9.1% ☐ D. 10%

6) Which expression is equivalent to $2(3x + 4)$? The diagram shows the split:



- ☐ A. $6x + 4$ ☐ C. $5x + 6$
☐ B. $6x + 8$ ☐ D. $3x + 8$

7) What is $-5 - (-9)$?

- ☐ A. -14 ☐ C. -4
☐ B. 14 ☐ D. 4

8) A laptop originally sells for \$1200. After a 15% discount and applying 8% sales tax on the discounted price, what is the final cost?

- ☐ A. \$1062 ☐ C. \$1080
☐ B. \$1020 ☐ D. \$1102.40



North Dakota NDSA 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 Dakota NDSA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (7.G.1-7.G.5) We know two angles (40° and 65° , so the third is 75°) and one side ($HI = 8$ cm) between two known angles. This is AAS (Angle–Angle–Side), which uniquely determines the triangle.
- 2) **Choice C is correct.** (7.EE.1-7.EE.2) Product of 5 and n is $5n$. Decreased by 7 means subtract 7: $5n - 7$.
- 3) **Choice A is correct.** (7.NS.1-7.NS.3) Negative divided by positive is negative: $-72 \div 8 = -9$.
- 4) **Choice A is correct.** (7.NS.1-7.NS.3) Divide: $\frac{5}{8} \div 4 = \frac{5}{8} \times \frac{1}{4} = \frac{5}{32}$ pound.
- 5) **Choice B is correct.** (7.EE.1-7.EE.2) An odd exponent preserves the sign of the base: $(-2)^3 = (-2) \cdot (-2) \cdot (-2) = -8$.
- 6) **Choice D is correct.** (7.EE.4a) Three bundles at \$5 each: $3(5) = \$15$. Eight cookies at \$0.50 each: $8(0.50) = \$4$. Total: $15 + 4 = \$19$.
- 7) **Choice C is correct.** (7.EE.4a) Distribute: $5x - 20 = 45$. Add 20: $5x = 65$. Divide by 5: $x = 13$.
- 8) **Choice A is correct.** (7.EE.3-7.EE.4) $5x - 10 + 10 = 40 + 10 \Rightarrow 5x = 50$. Then divide by 5: $x = 10$.
- 9) **Choice A is correct.** (7.NS.2d) $0.75 = \frac{75}{100}$. Find GCD(75, 100) = 25. Divide both: $\frac{75 \div 25}{100 \div 25} = \frac{3}{4}$. A is the simplified form.
- 10) **Choice B is correct.** (7.NS.1-7.NS.3) $13 \times 13 = 169$, so $\sqrt{169} = 13$.
- 11) **The correct answer is 83.3% .** (7.RP.3) Percentage = $(\$2,500 \div \$3,000) \times 100\% \approx 0.8333 \times 100\% \approx 83.3\%$.
- 12) **Choice A is correct.** (7.NS.1-7.NS.3) Total needed for average of 500 over 4 days = $500 \times 4 = 2000$ calories. Already burned: $450 + 510 + 495 = 1455$ calories. Needed Thursday: $2000 - 1455 = 545$ calories.
- 13) **Choice B is correct.** (7.NS.1-7.NS.3) $0.0089 = 8.9 \times 10^{-3}$. The coefficient must satisfy $1 \leq a < 10$.
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) Combine: $(9g + 4g - 5g) + (-7 + 12 + 3) = 8g + 8$.
- 15) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute 2: $2(4y) - 2(1) + 3y = 8y - 2 + 3y$. Combine: $8y + 3y - 2 = 11y - 2$.
- 16) **The correct answer is 6 .** (7.RP.3) Year 5: $2000(1.04)^5 = 2433.31$. Year 6: $2000(1.04)^6 = 2530.64 > 2500$.
- 17) **Choice C is correct.** (7.EE.3-7.EE.4) Perimeter: $2(3w - 2) + 2w = 28 \Rightarrow 6w - 4 + 2w = 28 \Rightarrow 8w = 32 \Rightarrow w = 4$.
- 18) **Choice C is correct.** (7.SP.5-7.SP.8) The rectangle is divided into four equal regions, each representing a $\frac{1}{4}$ probability. All outcomes are equally likely, so this is a uniform model.
- 19) **Choice D is correct.** (7.RP.3) Tip percentage = $\frac{18}{120} = 0.15 = 15\%$.
- 20) **The correct answer is A,D.** (7.NS.1-7.NS.3) Statement A is true: the opposite of -5 is 5 (positive). Statement D is true: -5 and 5 are each 5 units from zero. Statement B is false because opposites have the same absolute value. Statement C is false: $5 + (-5) = 0$, not 10.
- 21) **Choice B is correct.** (7.G.4-7.G.6) Rectangle: $5 \times 4 = 20$ in². Trapezoid: $\frac{1}{2}(5 + 3) \times 2 = 8$ in². Total: $20 + 8 = 28$ in².
- 22) **Choice D is correct.** (7.RP.1-7.RP.3) Markup: $50\% \times 8 = 4$. Selling price: $8 + 4 = 12$.
- 23) **Choice C is correct.** (7.G.4-7.G.6) Base area = $\frac{1}{2}(4 + 6) \times 3 = \frac{1}{2} \times 10 \times 3 = 15$ cm². Volume = $15 \times 10 = 150$ cm³.
- 24) **Choice C is correct.** (7.G.1-7.G.5) This condition (sometimes called the "ambiguous case") can produce 0, 1, or 2 different triangles, unlike the others, which uniquely determine a triangle.
- 25) **Choice B is correct.** (7.G.4-7.G.6) The diameter is always 2 times the radius: $d = 2r$.
- 26) **Choice B is correct.** (7.SP.1-7.SP.4) Sample A: $\frac{12}{80} = 0.15$ or 15%; Sample B: $\frac{15}{75} = 0.20$ or 20%; Sample C: $\frac{18}{120} = 0.15$ or 15%. Sample B is highest.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply doll height by scale: 2 feet $\times 12 = 24$ feet.
- 28) **The correct answer is 15 .** (7.NS.1b) $-3 + 18 = 15^\circ\text{C}$. A rise of 18° means adding 18 to the starting temperature.
- 29) **The correct answer is -325 .** (7.NS.1-7.NS.3) $-450 + 125 = -325$ meters.
- 30) **Choice D is correct.** (7.RP.1-7.RP.3) If $\frac{3}{4}$ patio uses $\frac{1}{2}$ ton, then 1 full patio uses $\frac{1/2}{3/4} = \frac{1}{2} \times \frac{4}{3} = \frac{2}{3}$ ton.
- 31) **Choice D is correct.** (7.RP.1-7.RP.3) Ratios: $12/3 = 4$, $24/6 = 4$, $36/9 = 4$. Constant ratio $k = 4$, so proportional.
- 32) **Choice D is correct.** (7.RP.1-7.RP.3) The ratio is $\frac{12}{3} = 4$, $\frac{20}{5} = 4$, $\frac{32}{8} = 4$. The equation is $C = 4g$.
- 33) **Choice C is correct.** (7.RP.3) Find 55% of 200 using the proportion $\frac{55}{100} = \frac{x}{200}$. Cross-multiply: $x = 110$.



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Hi, Detail Champion!

◇ In Grade 7, small details can change an entire answer: a negative sign, a decimal place, a unit, an exponent, or an inequality symbol. ◇

★ **Remember this:** You practiced noticing those details. That is a serious test skill, and it gets better with every careful review. This version gave you 8 opportunities to rehearse test-day habits. ★

Detail Checks

- **Signs:** Circle negatives before simplifying.
- **Symbols:** Read inequality signs carefully.
- **Decimals:** Line up place values.
- **Units:** Match the unit the question asks for.

Grade 7 test-day tip: Use the final minute on each section for a detail scan, not a full redo.

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

Jay Daie

Your Detail-Check Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** 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:

8 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 & 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!

Don't lose it—your extra practice and success start here!



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