

$\frac{2}{3}$

# FULL-LENGTH

$\frac{2}{4}$

# North Dakota

$7 \times 8 =$

$0,25$



Aligned to State Standards

# NDSA

$7 \times 8$

# MATH

$56 \div 7$

Grade

# 5

$(a+b)^2$

# PRACTICE TESTS

Complete State Standards Review  
with Answer Key and  
Essential Math Skills Practice



**3 Full-Length Practice Tests**  
Aligned to State Standards



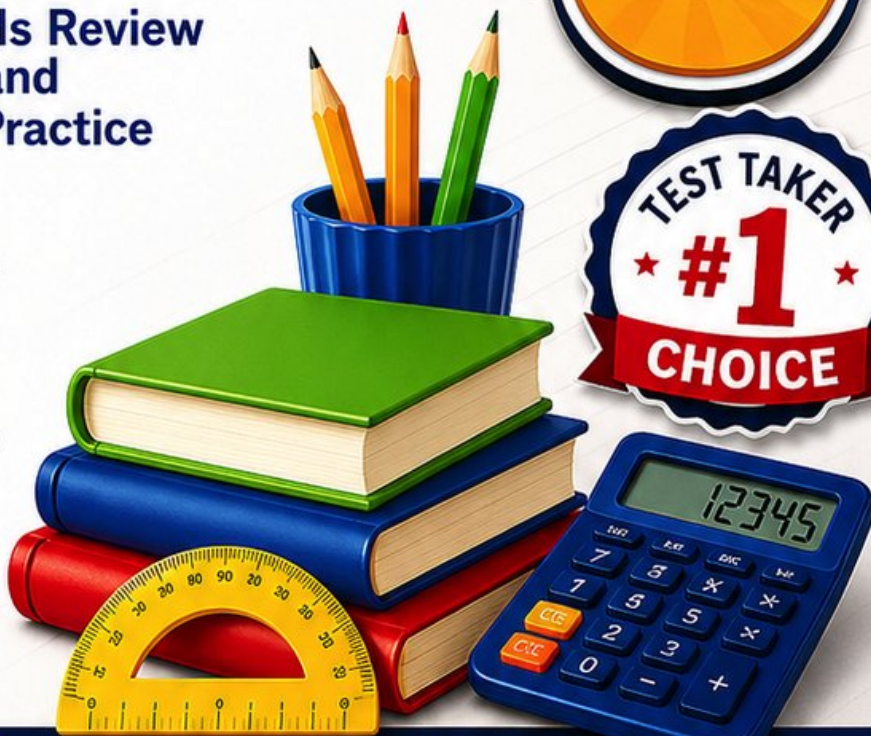
**Covers All Grade 5 Math Topics**  
Numbers & Operations, Fractions,  
Decimals, Geometry, Measurement,  
Data & Problem Solving



**Build Confidence**  
Strengthen Skills • Improve Accuracy  
• Boost Test Readiness



**Detailed Answer Key**  
Step-by-Step Explanations  
for All Questions



WRITTEN FOR  
GRADE 5 STUDENTS



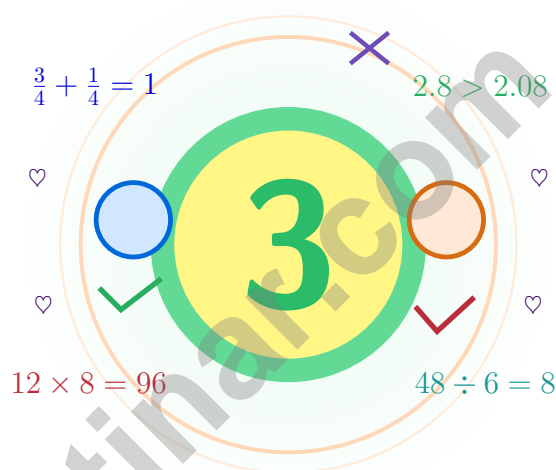
PERFECT FOR  
TEST PREP & REVIEW



CLASSROOM, HOME,  
OR SELF-STUDY USE

# 3 North Dakota NDSA Grade 5 Math Practice Tests

*Peace-garden math for thinkers who breathe wide*



Three full tests, a friendly quick review, smart strategy pages, and student-tested support that help Grade 5 mathematicians from The Peace Garden State walk in ready to think.

**Jay Daie and Reza Nazari**



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# Step Up, North Dakota – Math Camp Begins

Peace-garden math for thinkers who breathe wide

## To Every Grade 5 Problem Solver in North Dakota

Math is a lot like a North Dakota prairie – wide, open, and patient with anyone willing to keep looking.

Some questions will feel easy from the very first read. Others will ask you to pause, sketch, estimate, or try again. That is not a problem. That is practice doing exactly what it should do. Every honest attempt grows your math brain a little stronger.

### Notice

Notice the numbers, units, and any tricky words.

### Sketch

Sketch a picture, table, or quick number line.

### Confirm

Confirm your answer with an estimate or check.

**A North Dakota promise to yourself:** I will give each problem the steady gaze a prairie morning gives the horizon.

# How to Get the Most Out

A simple game plan that turns practice into real progress

## Step 1: Plan

**Plan a quiet hour for one full test.**  
Wake up the big Grade 5 ideas before the test starts so your brain is already warmed up.

## Step 2: Practice

**Take the test with steady focus.**  
Find a calm corner, settle in, and aim for careful, honest choices before quick ones.

## Step 3: Inspect

**Inspect every answer like a careful builder.**  
Circle missed questions, sort out what went sideways, and notice which skills are calling for more attention.

## Step 4: Adjust

**Adjust what needs adjusting and ride into the next test.**  
Read the explanation, fix the work, and carry that lesson forward into the next test.

## Your 3-Week Practice Map

<b>Week 1</b>	Begin with Test 1 – a low-pressure read of your math.
<b>Week 2</b>	Run Test 2 with one new habit, like always checking labels.
<b>Week 3</b>	Finish Test 3 with calm, careful, confident effort.



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## Meet the Tests

### What these practice tests help Grade 5 students build

These three practice tests prepare Grade 5 students in the Peace Garden State for the North Dakota NDSA with the calm focus of a wide-sky morning. The goal is bigger than getting answers right. Students are practicing how to read with care, choose a strategy, solve step by step, and explain their reasoning clearly – the same way mathematicians do every single day.

#### Selected-Response Questions

Students solve the problem and choose the best answer. Estimating first, ruling out weak choices, and checking for reasonableness can save both time and points.

#### Constructed-Response Questions

Students show their steps, explain a method, or back up an answer with clear math. Clean reasoning matters because it shows how the answer was actually found.

#### Grade 5 Ideas That Show Up Again and Again

- place value, comparing numbers, and rounding
- multi-digit addition, subtraction, multiplication, and division
- fractions, mixed numbers, and decimals
- perimeter, area, volume, and measurement conversions
- line plots, tables, numerical patterns, and coordinate points
- geometry and multi-step real-world problems

**What strong work looks like on the NDSA:** the math is correct, the steps are readable, the labels and units match the problem, and the final answer truly answers the question being asked.



# Table of Contents

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## Grade 5 Mathematics Reference Materials

### PERIMETER AND AREA

Perimeter of Rectangle  $P = 2l + 2w$  or  $P = 2(l + w)$

Area of Rectangle  $A = l \times w$

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

Volume of Rectangular Prism  $V = l \times w \times h$

### LENGTH

#### Customary

1 foot (ft) = 12 inches (in.)

1 yard (yd) = 3 feet (ft)

1 yard (yd) = 36 inches (in.)

#### Metric

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

1 kilometer (km) = 1,000 meters (m)

### CAPACITY

#### Customary

1 cup (c) = 8 fluid ounces (fl oz)

1 pint (pt) = 2 cups (c)

1 quart (qt) = 2 pints (pt)

1 gallon (gal) = 4 quarts (qt)

#### Metric

1 liter (L) = 1,000 milliliters (mL)

### WEIGHT AND MASS

#### Customary

1 pound (lb) = 16 ounces (oz)

#### Metric

1 kilogram (kg) = 1,000 grams (g)

1 gram (g) = 1,000 milligrams (mg)

### TIME

1 minute (min) = 60 seconds (sec)    1 week = 7 days

1 hour (hr) = 60 minutes (min)    1 year = 12 months

1 day = 24 hours (hr)    1 year = 52 weeks



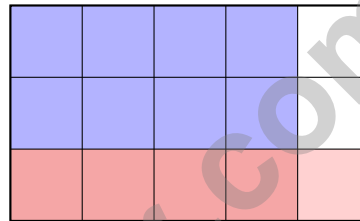
1)

Original	Divide by	Result
205.7	100	?

What is the result?

- A. 20.57  C. 0.205  
 B. 2.057  D. 2057

2) The area model below shows blue shading across 4 of 5 columns. The red shading covers 1 of 3 rows. What does the double-shaded overlap represent?



- A.  $\frac{4}{15}$   C.  $\frac{2}{5}$   
 B.  $\frac{1}{8}$   D.  $\frac{3}{5}$

3) Find the least common denominator of  $\frac{2}{3}$  and  $\frac{1}{4}$ .

*Record your answer in the space provided.*





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- 1) Error analysis: Sarah writes  $\frac{6}{10}$  as 0.06 instead of 0.6. Identify her mistake.
- A. Sarah placed the digit 6 in the hundredths place instead of the tenths place.
  - B. Sarah should have written it as a mixed number.
  - C.  $\frac{6}{10}$  cannot be written as a decimal.
  - D. Sarah forgot to add a zero.

- 2) Without calculating, compare  $20 \times \frac{1}{4}$  to 20. Which is true?

- A. Comparison impossible
- B.  $20 \times \frac{1}{4} = 20$
- C.  $20 \times \frac{1}{4} > 20$
- D.  $20 \times \frac{1}{4} < 20$

- 3) In the number 6.184, what digit is in the thousandths place?

*Record your answer in the space provided.*

- 4) A banner is 2 yards long. How many inches is that? (1 yard = 3 feet, 1 foot = 12 inches)

- A. 36 inches
- B. 48 inches
- C. 60 inches
- D. 72 inches

- 5) If a rectangular prism has a volume of 56 cubic units and a base area of 14 square units, what is its height?

- A. 2 units
- B. 3 units
- C. 4 units
- D. 7 units



## Grade 5 Mathematics Reference Materials

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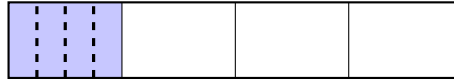
1 hour (hr) = 60 minutes (min)    1 year = 12 months

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- 1) The model shows  $\frac{1}{4}$  of a whole split into 4 equal parts. What fraction of the whole is each small part?

$\frac{1}{4}$  split into 4



1 whole split into 4 equal parts

- A.  $\frac{1}{4}$ 
 C.  $\frac{1}{16}$   
 B.  $\frac{1}{8}$ 
 D.  $\frac{1}{2}$
- 2) A rectangular prism has a base area of  $48 \text{ ft}^2$  and height 5 ft. What is the volume?
- A.  $200 \text{ ft}^3$ 
 C.  $240 \text{ ft}^3$   
 B.  $220 \text{ ft}^3$ 
 D.  $260 \text{ ft}^3$
- 3) A student says: "To find volume, I use  $V = l + w + h$ ." Is this correct?
- A. Yes, always correct.
  C. No, volume uses multiplication:  $V = l \times w \times h$ .  
 B. No, addition gives perimeter, not volume.
  D. Yes, but only for cubes.
- 4) Evaluate:  $25 - (8 + 2) \div 5$
- A. 3
  C. 21  
 B. 17
  D. 23
- 5) Write  $10^3$  as a standard number.

*Record your answer in the space provided.*



## Practice Test Answer Keys

### How to use this section:

1. check your answer
2. circle missed questions
3. rework them before reading the explanation

**Good correction habits build strong scores.**

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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(5.NO.NBT.7)** The table shows  $205.7 \div 100 = 2.057$ . Move decimal 2 places left.
- 2) **Choice A is correct.** **(5.GM.M.2)** The double-shaded overlap shows  $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$ .
- 3) **The correct answer is 12.** **(5.NO.NF.3)** The least common multiple of 3 and 4 is 12.
- 4) **Choice A is correct.** **(5.GM.G.1)** All three angles ( $30^\circ$ ,  $70^\circ$ ,  $80^\circ$ ) are less than  $90$  degrees, making this an acute triangle.
- 5) **Choice D is correct.** **(5.NO.NF.3)**  $\text{LCM}(12,4) = 12$ .  $\frac{1}{4} = \frac{3}{12}$ ,  $\frac{7}{12} + \frac{3}{12} = \frac{10}{12} = \frac{5}{6}$  mile.
- 6) **Choice D is correct.** **(5.NO.NBT.5)**  $45.6 \div 8 = 5.7$ . Divide  $456 \div 8 = 57$ , then place decimal one place from right: 5.7.
- 7) **Choice D is correct.** **(5.NO.NF.2)**  $8 \times \frac{3}{8} = 3$  slices. The scaling factor  $\frac{3}{8}$  is less than 1, so the result is smaller than 8.
- 8) **Choice C is correct.** **(5.DPS.D.1)** Highest score is 6, lowest is 2. Difference:  $6 - 2 = 4$ .
- 9) **Choice B is correct.** **(5.AR.OA.5)** Differences:  $5 - 2 = 3$ ,  $10 - 5 = 5$ ,  $17 - 10 = 7$ ,  $26 - 17 = 9$ . Next:  $26 + 11 = 37$ .
- 10) **Choice B is correct.** **(5.GM.G.3)** Look at the y-coordinates. Point (6, 4) has y-coordinate 4, and point (3, 8) has y-coordinate 8. Since 8 is greater than 4, (3, 8) is farther up from the x-axis.
- 11) **Choice B is correct.** **(5.GM.G.1)** A square is a rectangle, a rhombus, and a parallelogram.
- 12) **Choice D is correct.** **(5.GM.M.3)** Box 1:  $5 \times 3 \times 4 = 60$  cubic inches. Box 2:  $6 \times 3 \times 4 = 72$  cubic inches. Combined:  $60 + 72 = 132$  cubic inches.
- 13) **Choice A is correct.** **(5.DPS.D.1)** The plot shows 3 students at 15 seconds, 2 students at 20 seconds, 3 students at 25 seconds, and 3 students at 30 seconds. Total:  $(15 \times 3) + (20 \times 2) + (25 \times 3) + (30 \times 3) = 250$  seconds.
- 14) **Choice A is correct.** **(5.AR.OA.3)** The apples cost  $6 \times 2$ , and the oranges cost  $9 \times 1$ . A \$3 discount lowers the total, so subtract 3 at the end.
- 15) **Choice D is correct.** **(5.AR.OA.5)** For input 4,  $3 \times 4 + 2 = 14$ , not 15. The correct pair is (4, 14).
- 16) **Choice A is correct.** **(5.NO.NF.4)** This is correct:  $6 \times \frac{1}{3} = \frac{6}{3} = 2$ . The student correctly multiplied the numerator by 6 and simplified.
- 17) **Choice B is correct.** **(5.GM.G.3)** For each point:  $2/2 = 1$ ,  $4/2 = 2$ ,  $6/2 = 3$ ,  $8/2 = 4$ . The y-value is half the x-value.
- 18) **Choice B is correct.** **(5.NO.NF.4)**  $\frac{1}{3} \div 4 = \frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$ .
- 19) **Choice B is correct.** **(5.GM.M.3)** Even though the width is 1, it still counts as one row. Multiply  $10 \times 1 \times 3 = 30$  unit cubes.
- 20) **Choice D is correct.** **(5.NO.NBT.5)** A: 7.25; B: 7.25; C: 7.55; D: 4.25. Option D is smallest.
- 21) **Choices A, B, C are correct.** **(5.GM.M.3)** Volume is measured in cubic units. For non-overlapping rectangular prisms, multiply each part's dimensions and add the part volumes.
- 22) **The correct answer is 720,000.** **(5.NO.NBT.7)** Use  $8 \times 9 = 72$ . The factors 80 and 9,000 have four zeros total, so the product is 720,000.
- 23) **The correct answer is  $(6 \times 10) \div 2$ .** **(5.AR.OA.3)** The result of  $6 \times 10$  is divided by 2, so write  $(6 \times 10) \div 2$ . Equivalent expressions that preserve this order are also acceptable.
- 24) **Choice B is correct.** **(5.NO.NBT.5)** Hundredths:  $5 + 9 = 14$ , so write 4 and regroup 1 tenth. Tenths:  $4 + 3 + 1 = 8$ . Ones:  $3 + 1 = 4$ . The sum is 4.84.
- 25) **Choice B is correct.** **(5.NO.NF.3)** Multiply numerator and denominator by 4:  $\frac{3 \times 4}{4 \times 4} = \frac{12}{16}$ .
- 26) **Choice C is correct.** **(5.DPS.D.1)** Total distance:  $45 + 38 = 83$  kilometers. Convert to meters:  $83 \text{ km} \times 1,000 = 83,000$  meters.
- 27) **The correct answer is 9.1.** **(5.NO.NBT.3)** Hundredths digit is 7 (with 5 in thousandths). Since  $7 \geq 5$ , round tenths up:  $9.0 \rightarrow 9.1$ .
- 28) **Choice D is correct.** **(5.NO.NBT.6)**  $1,248 \div 24 = 52$  crates. Check:  $24 \times 52 = 1,248$ .
- 29) **Choice A is correct.** **(5.DPS.D.1)** Choose the operation from the story, then keep the unit with the answer. Multiply:  $2.4 \times 15 = 36$  cups. This confirms the answer.
- 30) **Choice A is correct.** **(5.GM.M.1)** Convert all to meters:  $5,000 \text{ mm} = 5 \text{ m}$ ,  $50 \text{ m} = 50 \text{ m}$ ,  $0.5 \text{ km} = 500 \text{ m}$ , and  $600 \text{ cm} = 6 \text{ m}$ . The smallest is 5,000 mm, which is 5 m.



### Notes From the Math Gardener

#### Dear Math Gardener,

◇ Look at how much you've grown! 3 practice tests is like 3 seasons of planting and harvesting. Each problem was a seed, each effort was water, and each "aha!" was sunshine. Your math garden is strong now—and it shows. ◇

★ **What gardeners know:** growth is steady, not sudden. You don't see roots growing, but they are. You don't always feel yourself getting smarter, but you are. The proof is in the questions you can solve today that felt impossible 3 tests ago. ★

#### Garden Inspection Report

- **Roots (foundation):** DEEP! Your basic skills are solid.
- **Stems (structure):** STURDY! Your problem-solving steps hold up.
- **Leaves (skills):** LUSH! You have many strategies to draw on.
- **Flowers (confidence):** BLOOMING! You believe in your skills.

**Gardener's wisdom:** keep watering your math garden long after the test. Every habit you built (read carefully, plan, check) will grow with you for years. The test is just one harvest. Your garden keeps growing.

If you want to share a proud moment or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com). I'd love to hear from you!

**Jay Daie**

Your Math Gardener (Keep Growing!)

# Build Skills. Boost Confidence. Excel on the Grade 5 Math Test.

Help your child succeed with confidence! This book includes **3 full-length Grade 5 Math practice tests** aligned to state standards. With a focus on essential skills, problem solving, and test readiness, it's the perfect resource for classroom, home, or on-the-go practice.



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Strengthen understanding and problem-solving through varied question types.



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Use score trackers to identify strengths and focus on areas that need more practice.



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