

# 9

# Ohio OST

# GRADE 5 MATHEMATICS PRACTICE TESTS

Full-Length Standards-Aligned Practice  
for Strong Math Performance

$$A = l \times w$$

$$x^2 + 3x - 4 = 0$$

$$y = 2x + 1$$



**9**  
FULL-LENGTH  
PRACTICE  
TESTS

$$2,345 \times 6 = 14,070$$



$$\frac{3}{4} + \frac{1}{8} = \frac{7}{8}$$

$$7.2 \div 0.8 = 9$$



$$(12 + 8) \div 4 = 5$$



Build Confidence



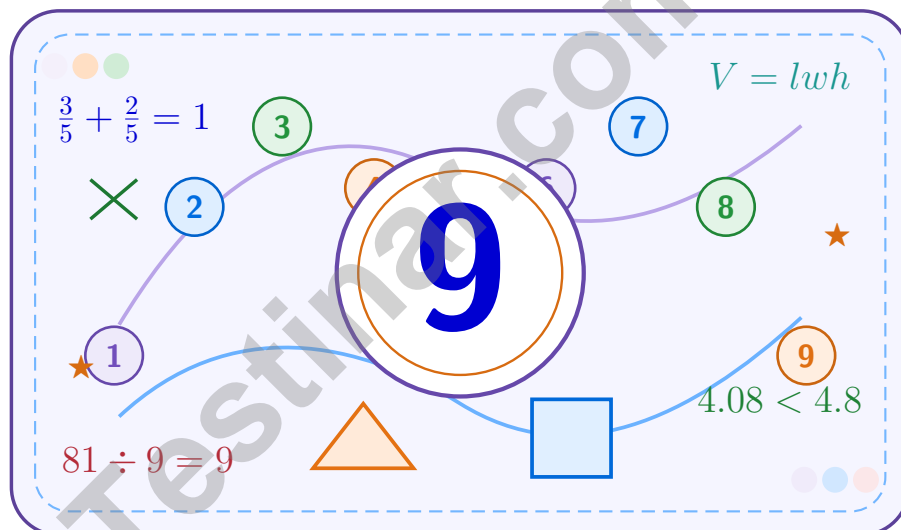
Improve Math Skills



Achieve Success

# 9 Ohio OST Grade 5 Math Practice Tests

*A nine-step confidence climb with clear review, smart strategy, and practice that gets stronger every round*



**Nine full tests, focused skill boosters, and student-friendly support from start to finish for Grade 5 mathematicians who want to climb higher.**

**Jay Daie and Reza Nazari**



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# Welcome to the Confidence Climb

This book is here to help you practice with purpose and rise step by step

## To the Grade 5 Mathematician

This practice book is a place to think, try, fix, and grow. You do not have to be perfect on the first question or the first test. What matters most is careful effort, clear work, and learning from each round of practice.

Use these nine tests like stepping-stones. Take one test at a time, check your answers honestly, and notice which skills need more attention. Small improvements add up fast.

### Try

Give each problem your best thinking.

### Check

Study mistakes and learn what happened.

### Rise

Bring that lesson into the next round.

**A strong habit for every page:** read carefully, estimate when it helps, show your steps, and keep going even when a question feels tricky. That is how steady math confidence is built.

# How to Use This Book

A simple practice routine that turns nine tests into steady growth

## A Nine-Session Climb Map

Session	Mission Focus
1	Take Test 1; review place value and operation slips.
2	Take Test 2; keep work neat and easy to read.
3	Take Test 3; give extra time to fractions and decimals.
4	Take Test 4; slow down on word problems and units.
5	Take Test 5; compare scores and habits with earlier rounds.
6	Take Test 6; notice which habits are now automatic.
7	Take Test 7; explain open-ended answers clearly.
8	Take Test 8; review topics that still need attention.
9	Take Test 9; finish with calm, careful, confident work.

### Step 1: Warm Up

**Start with the quick review.**  
Spend a few minutes refreshing the ideas before you start a test.

### Step 2: Take the Test

**Take one full practice test.**  
Work in a quiet space and let accuracy matter more than speed.

### Step 3: Study the Pattern

**Check your work honestly.**  
Circle missed questions and notice patterns in the mistakes.

### Step 4: Learn, Then Retry

**Read the explanation and try again.**  
Learning happens after the test too. Fixing mistakes is one of the smartest parts of practice.



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# Test Overview

## What this practice book helps students do

These practice tests are designed to help Grade 5 students get comfortable with the kind of thinking used on the Ohio OST. The goal is bigger than only getting answers right. Students are practicing how to read closely, choose a strategy, solve carefully, and explain their work when needed.

### Selected-Response Questions

Students solve the problem and choose the best answer. Estimating first and crossing out weak choices can save time and points.

### Constructed-Response Questions

Students show their thinking, steps, models, or explanations. Even when unsure, writing what they know can help organize the problem.

### Grade 5 Skills You Will Practice Often

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

**What strong work looks like:** the answer is correct, the steps are clear, the labels or units are included, and the final result makes sense.



# 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)

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### 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) If  $1,620 \div 27 = 60$ , which division problem has the same quotient?

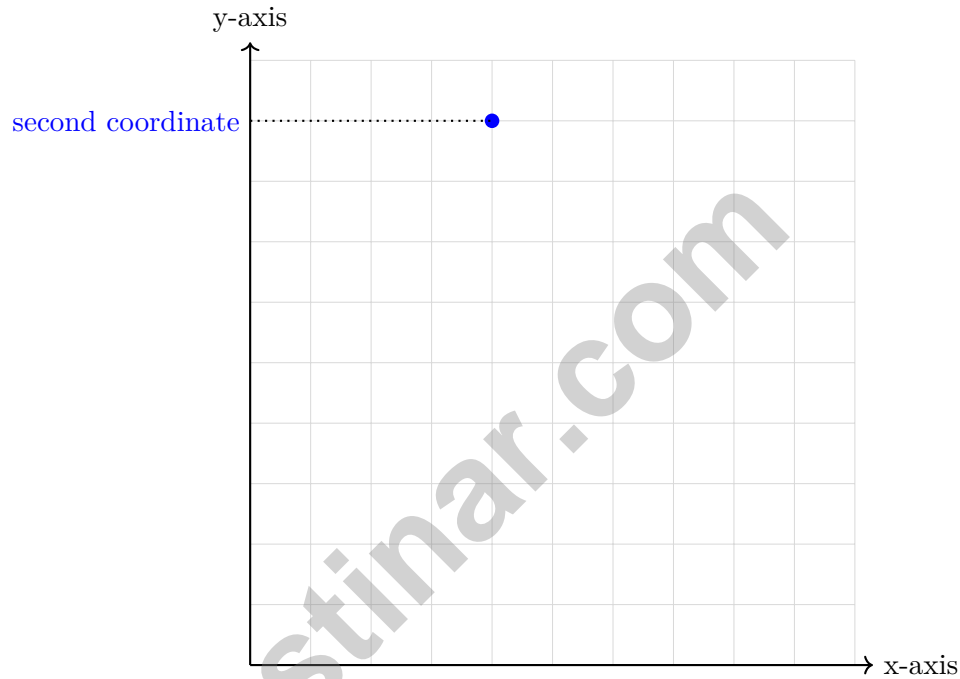
A.  $1,620 \div 54 = ?$

C.  $810 \div 27 = ?$

B.  $3,240 \div 54 = ?$

D.  $1,620 \div 30 = ?$

2) What is the y-coordinate of the point at (4, 9)?



A. 4

C. 13

B. 9

D. 5

3) Three identical rectangular prisms each have dimensions 4 in  $\times$  5 in  $\times$  3 in. What is the total volume of all three?

A.  $180 \text{ in}^3$

C.  $300 \text{ in}^3$

B.  $240 \text{ in}^3$

D.  $360 \text{ in}^3$





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1 quart (qt) = 2 pints (pt)	
1 gallon (gal) = 4 quarts (qt)	

### WEIGHT AND MASS

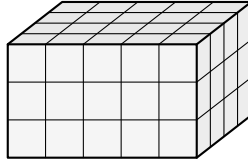
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- 1) A rectangular prism has a base of  $4 \times 5$  unit cubes. If it contains 60 unit cubes total, how many layers high is it?



- A. 2 layers
- B. 3 layers
- C. 4 layers
- D. 6 layers
- 2) Convert 5,000 milliliters to liters.
- A. 0.5 L
- B. 500 L
- C. 50 L
- D. 5 L
- 3) 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.  $\frac{1}{4}$
- B.  $\frac{1}{8}$
- C.  $\frac{1}{16}$
- D.  $\frac{1}{2}$



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1) What is  $112 \times 7$ ?

A. 780

C. 788

B. 792

D. 784

2) Find:  $32.1 \div 10^2$ .

*Record your answer in the space provided.*

3) Pattern A: 1, 2, 3, 4, ... Pattern B: 5, 10, 15, 20, ... Which ordered pair represents the 4th terms of Patterns A and B?

*Record your answer in the space provided.*

4) A video game store counts inventory. Game A: 50, 100, 150, 200. Game B: 10, 20, 30, 40. Write the relationship between A and B.

Game B	Game A
10	50
20	100
30	150
40	200

A.  $A = 2 \times B + 30$

C.  $A = B - 40$

B.  $A = B + 40$

D.  $A = 5 \times B$



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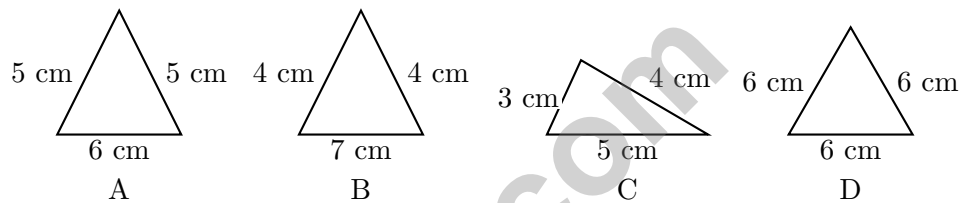


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1) A student calculates the volume of a box using only the length and width, forgetting to multiply by the height. The length is 9 cm, the width is 5 cm, and the height is 4 cm. What error was made?

- A. Calculated  $9 + 5 + 4 = 18$  (perimeter)
- B. Calculated  $9 + 5 = 14$  (used only two dimensions)
- C. Calculated  $9 \times 5 \times 4 = 180$  (correct answer)
- D. Calculated  $9 \times 5 = 45$  (missing height multiplication)

2) Which triangle has three sides of different lengths?

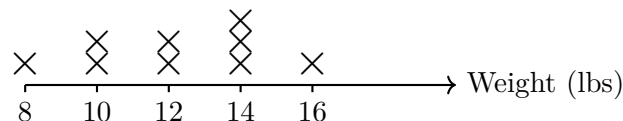


- A. A
- B. B
- C. C
- D. D

3) A step-shaped solid is decomposed into three non-overlapping rectangular prisms. The prisms measure 10 feet by 5 feet by 3 feet, 8 feet by 4 feet by 3 feet, and 7 feet by 4 feet by 3 feet. What is the total volume?

- A. 246 cubic feet
- B. 330 cubic feet
- C. 180 cubic feet
- D. 234 cubic feet

4) The line plot shows the weight (in pounds) of puppies at the shelter:



Each puppy gets  $\frac{1}{2}$  cup of food. How many cups of food are needed for all the puppies?

- A. 4 cups
- B.  $5\frac{1}{2}$  cups
- C. 5 cups
- D.  $4\frac{1}{2}$  cups



## 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 Ohio scores.**

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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (5.NBT.6) If  $1,620 \div 27 = 60$ , then  $3,240 \div 54 = 60$  as well (double both dividend and divisor). Option B:  $54 \times 60 = 3,240$  (correct).
- 2) **Choice B is correct.** (5.NBT.6) In an ordered pair  $(x, y)$ , the second number is the y-coordinate. For  $(4, 9)$ , the y-coordinate is 9.
- 3) **Choice A is correct.** (5.MD.5a) One prism:  $4 \times 5 \times 3 = 60 \text{ in}^3$ . Three prisms:  $60 \times 3 = 180 \text{ in}^3$ .
- 4) **Choice B is correct.** (5.MD.5a) LCD of 8 and 12 is 24.  $\frac{1}{8} = \frac{3}{24}$  and  $\frac{3}{12} = \frac{6}{24}$ .
- 5) **Choice D is correct.** (5.NF.2) Each row shows  $\frac{2}{5}$ . Three rows make  $3 \times \frac{2}{5} = \frac{6}{5}$ , which is one whole and one fifth more.
- 6) **Choice D is correct.** (5.NBT.2) The nonzero parts make  $8 \times 9 = 72$ , which has no trailing zero. The four zeros from 800 and 900 give 720,000, so the product has 4 zeros.
- 7) **Choice D is correct.** (5.NBT.2) Since 2 pints = 1 quart, multiply 3 by 2:  $3 \times 2 = 6$  pints.
- 8) **Choice A is correct.** (5.MD.1) Write each value in standard form: 2,000,000, 2,200,000, and 2,500,000. Then order them from least to greatest.
- 9) **Choice A is correct.** (5.MD.5c) A quadrilateral with two pairs of parallel sides and four right angles is a rectangle. Since the sides are not all the same length, it is not a square.
- 10) **Choice B is correct.** (5.MD.5c) Hundredths:  $5 + 8 = 13$  (regroup 1 tenth); tenths:  $7 + 6 + 1 = 14$  (regroup 1 one); ones:  $2 + 3 + 1 = 6$ . Sum is 6.43.
- 11) **Choice B is correct.** (5.NF.2) Total cut:  $\frac{3}{8} + \frac{1}{4} = \frac{3}{8} + \frac{2}{8} = \frac{5}{8}$  meter. Remaining:  $1 - \frac{5}{8} = \frac{3}{8}$  meter.
- 12) **The correct answer is 60.** (5.MD.4) Multiply the number of cubes in each layer by the number of layers:  $12 \times 5 = 60$ . The volume is 60 cubic units.
- 13) **Choice D is correct.** (5.MD.4) Use output = input  $\times$  input. With input 5, the output is  $5 \times 5 = 25$ , so the ordered pair is  $(5, 25)$ .
- 14) **Choice A is correct.** (5.G.2)  $\frac{1}{3} \div 6 = \frac{1}{3} \times \frac{1}{6} = \frac{1}{18}$ .
- 15) **Choice A is correct.** (5.NF.7c)  $\frac{2}{9} \times \frac{3}{4} = \frac{6}{36}$ . Simplify by dividing numerator and denominator by 6:  $\frac{6}{36} = \frac{1}{6}$ .
- 16) **Choice A is correct.** (5.NF.5b) The GCF of 16 and 20 is 4. Dividing both by 4:  $\frac{16}{20} = \frac{16 \div 4}{20 \div 4} = \frac{4}{5}$ .
- 17) **Choice B is correct.** (5.NF.2)  $0.037 \times 100 = 3.7$ . In the product, the digit 3 is in the ones place.
- 18) **Choice A is correct.** (5.NBT.1)  $V = B \times h = 32 \times 9 = 288 \text{ in}^3$ .
- 19) **The correct answer is 24.** (5.MD.5a) Think of the prism as layers of cubes. Each layer has  $4 \times 3 = 12$  cubes, and 2 layers make  $12 \times 2 = 24$  unit cubes.
- 20) **Choice D is correct.** (5.MD.3b) The four vertices form a quadrilateral with four right angles. The width is 4 units and the height is 3 units. Since the sides are not all equal, it is a rectangle, not a square.
- 21) **Choice C is correct.** (5.OA.1) The parentheses come first, so  $15 \div 3 = 5$ . After that, add 7:  $5 + 7 = 12$ .
- 22) **Choices A, B are correct.** (5.OA.1) 4.678 rounds to 4.7 to the nearest tenth and 4.68 to the nearest hundredth. C should round up to 5, and D rounds down incorrectly.
- 23) **Choice C is correct.** (5.G.3) One angle measures 112 degrees, which is greater than 90 degrees, making this an obtuse triangle.
- 24) **Choice B is correct.** (5.G.3) Total used:  $47.5 + 38.25 = 85.75$  liters. Remaining:  $150 - 85.75 = 64.25$  liters.
- 25) **Choice B is correct.** (5.MD.1) Add:  $1\frac{5}{8} + 2\frac{3}{8} = 3\frac{8}{8} = 4 \text{ m}$ .
- 26) **Choice C is correct.** (5.NF.1) One tile has area  $\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$  square foot.
- 27) **The correct answer is 20.** (5.NF.7c) Each whole contains 5 one-fifth pieces. With 4 wholes,  $4 \times 5 = 20$ , so there are 20 fifths in all.
- 28) **Choice D is correct.** (5.NF.7c) Use total amount divided by the size of one piece. The equation is  $7 \div \frac{1}{4} = n$ .
- 29) **Choice C is correct.** (5.NF.7c) Division comes first:  $18 \div 6 = 3$ . Now the expression is  $3 + 3 - 1$ , which equals 5.
- 30) **Choice B is correct.** (5.OA.1) Borrow 1 from 5:  $4\frac{7}{6} - 2\frac{5}{6} = 2\frac{2}{6}$ .



## Strong Climber, Listen Up!

◇ You did it. You climbed all 9 practice tests like a steady mountain climber—one foothold, one breath, one step at a time. The view from the top is wonderful because you earned it. Test day is the next peak, and you are stronger than the climber you were when you started. ◇

★ **Here is what mountain guides teach:** pacing matters more than speed. Take steady steps. Check your footing. Keep your eyes on the path. The same wisdom helps on a math test: read carefully, work calmly, and check your work before you move on. ★

### Climber's Field Notes

- **Endurance:** STRONG! You can finish a long climb without losing focus.
- **Footwork:** STEADY! Your steps (your steps in problem-solving) are reliable.
- **Map Reading:** CLEAR! You read questions carefully before you start.
- **Summit Mindset:** READY! You know how to push through the last stretch.

**Field tip:** on test day, take small breaths between problems. Each problem is a foothold. Take it. Move on. Take the next. That is how mountains get climbed—and how tests get conquered.

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 Guide (Onward and Upward)

# PRACTICE MORE. ACHIEVE MORE.

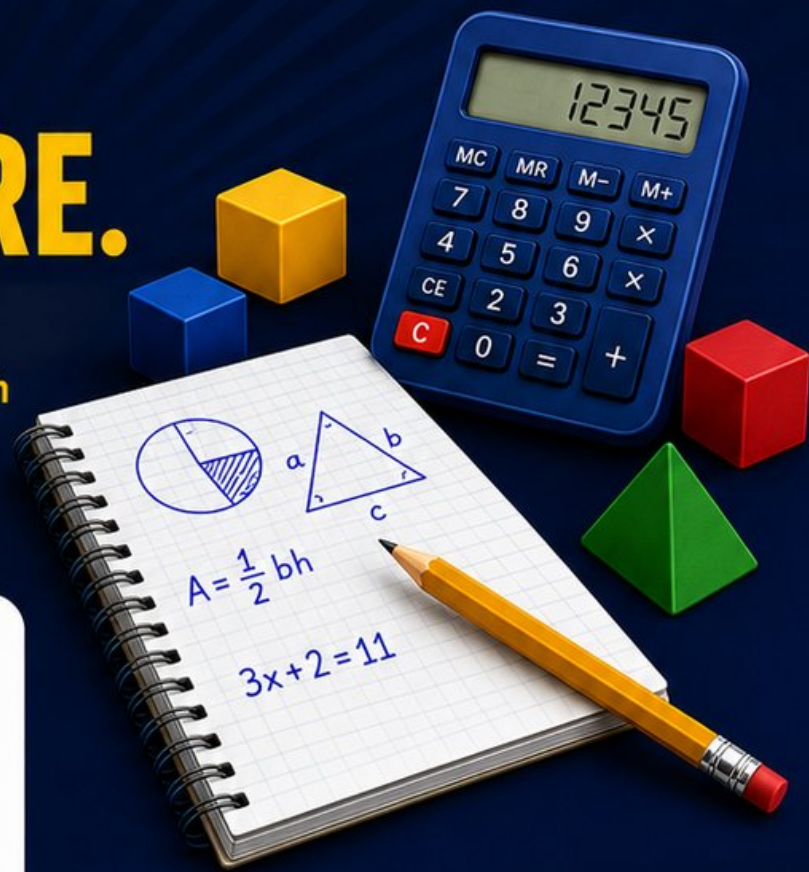
Give your child the edge they need to excel in **Grade 5 Math!** This book includes **9 full-length** practice tests designed to build confidence, sharpen skills, and improve test performance.

# 9

**FULL-LENGTH  
PRACTICE  
TESTS**

- ✓ Realistic.
- ✓ Rigorous.
- ✓ Results-Driven.

More practice today for a **stronger** tomorrow.



## THIS BOOK HELPS YOUR CHILD:



### Build Confidence

Familiar, focused practice reduces anxiety and boosts self-belief.



### Strengthen Skills

Reinforces key math concepts through high-quality, standards-aligned questions.



### Improve Test Readiness

Full-length tests help students understand test format, pacing, and question types.



### Track Progress

Identify strengths and target areas with purposeful practice.



### Achieve Success

Better preparation leads to higher scores and bright futures.

## COVERS ALL ESSENTIAL TOPICS

- ✓ Whole Numbers & Operations
- ✓ Fractions & Decimals
- ✓ Algebraic Thinking
- ✓ Geometry
- ✓ Measurement & Data
- ✓ Graphing & Data Analysis
- ✓ Number Patterns
- ✓ Word Problems
- ✓ Ratio & Proportion
- ✓ Perimeter, Area & Volume
- ✓ And More!



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