

$\frac{2}{3}$

# FULL-LENGTH

$\frac{2}{4}$

0,25

# Ohio

$7 \times 8 =$



Aligned to State Standards

# OST

$7 \times 8$

$56 \div 7$

# MATH

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



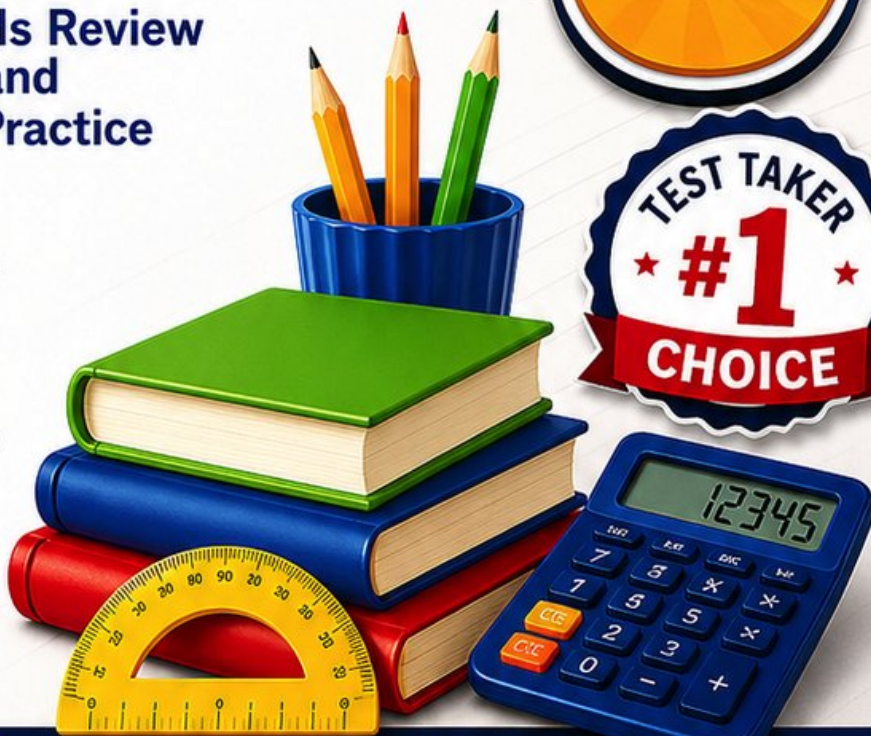
Covers All Grade 5 Math Topics  
Numbers & Operations, Fractions,  
Decimals, Geometry, Measurement,  
Data & Problem Solving



Build Confidence  
Strengthen Skills • Improve Accuracy  
• Boost Test Readiness



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



WRITTEN FOR  
GRADE 5 STUDENTS



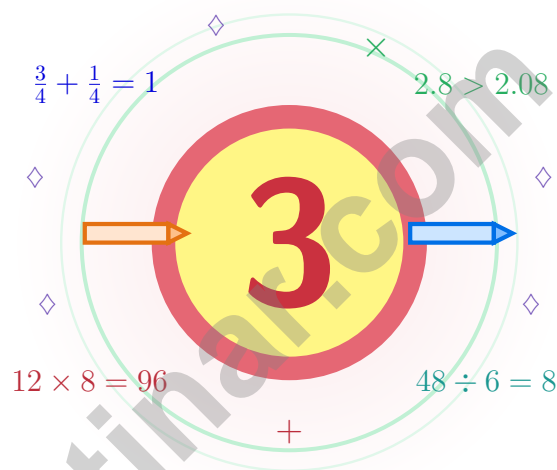
PERFECT FOR  
TEST PREP & REVIEW



CLASSROOM, HOME,  
OR SELF-STUDY USE

# 3 Ohio OST Grade 5 Math Practice Tests

*Buckeye math for thinkers who show up steady*



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

**Jay Daie and Reza Nazari**



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# Welcome, Ohio Math Explorer

Buckeye math for thinkers who show up steady

## A Note to Grade 5 Mathematicians of Ohio

Math is like an Ohio season – it changes, but the careful student notices what stays the same.

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.

### Look

Look at the problem  
like a detective looks at  
a clue.

### Test

Test your idea with one  
careful step at a time.

### Grow

Grow stronger by  
reviewing exactly what  
tripped you up.

**An Ohio promise to yourself:** I will show up steady, like Ohio in October: warm, focused, and full of color.

# How to Use This Book

A simple game plan that turns practice into real progress

## Step 1: Read

**Read the quick review pages first.**  
Wake up the big Grade 5 ideas before the test starts so your brain is already warmed up.

## Step 2: Try

**Try one test with full attention.**  
Find a calm corner, settle in, and aim for careful, honest choices before quick ones.

## Step 3: Reflect

**Reflect on which skills want more sunlight.**  
Circle missed questions, sort out what went sideways, and notice which skills are calling for more attention.

## Step 4: Lift

**Lift those skills with practice before test 2.**  
Read the explanation, fix the work, and carry that lesson forward into the next test.

## A Strong 3-Week Ohio Routine

<b>Week 1</b>	Use Test 1 to scout the territory.
<b>Week 2</b>	Use Test 2 to repair the trail.
<b>Week 3</b>	Use Test 3 to walk it cleanly from start to finish.



Scan me

# Test Overview

## What these practice tests help Grade 5 students build

These three practice tests prepare Grade 5 students in the Buckeye State for the Ohio OST with the steady focus of a long fall walk. 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 OST:** 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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Practice Test Answers and Explanations	_____	66

## 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

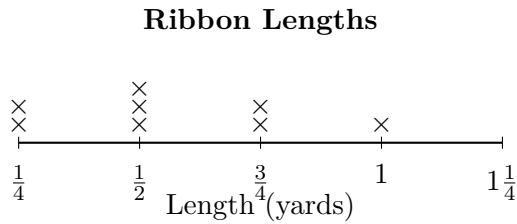
1 minute (min) = 60 seconds (sec)    1 week = 7 days

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

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



- 1) The line plot displays ribbon lengths in yards:



What is the total length of the three ribbons that each measure  $\frac{1}{2}$  yard?

- A. 1 yard
  C.  $1\frac{1}{2}$  yards  
 B.  $1\frac{1}{4}$  yards
  D. 2 yards
- 2) A school has 6 buses. Each bus holds 32 students. 8 students are absent. Evaluate  $6 \times 32 - 8$  to find the number of students at school today.
- A. 184
  C. 200  
 B. 192
  D. 176
- 3) A ribbon is 15 inches long. You need to cut it to  $\frac{2}{5}$  of its length. How long will the cut piece be?
- A. 3 inches
  C. 12 inches  
 B. 9 inches
  D. 6 inches
- 4) A jug holds  $\frac{5}{6}$  gallon of juice. After pouring out  $\frac{1}{3}$  gallon, how much remains?

*Record your answer in the space provided.*



5) A planter has 6 pounds of soil. Each pot uses one fifth pound. Which division equation matches the situation?

A.  $\frac{1}{5} \div 6 = n$

B.  $6 \times \frac{1}{5} = n$

C.  $6 + \frac{1}{5} = n$

D.  $6 \div \frac{1}{5} = n$

6) Subtract:  $\frac{7}{10} - \frac{1}{4}$

A.  $\frac{6}{10}$

B.  $\frac{6}{14}$

C.  $\frac{9}{20}$

D.  $\frac{13}{20}$

7) Which expression is greater:  $(20 - 5) \times 3$  or  $20 - (5 \times 3)$ ?

A.  $(20 - 5) \times 3$

B.  $20 - (5 \times 3)$

 C. The expressions are equal. D. Cannot be determined.

8) Pattern W starts at 6 and increases by 2. Pattern X starts at 1 and increases by 1. At step 4 in the table, what is the sum of the two terms?

Step	W	X
1	6	1
2	8	2
3	10	3
4	?	?

A. 15

B. 18

C. 17

D. 16



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

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### LENGTH

#### Customary

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1) Which equation shows the mistake of reversing the dividend and divisor for:  $8 \div \frac{1}{4}$ ?

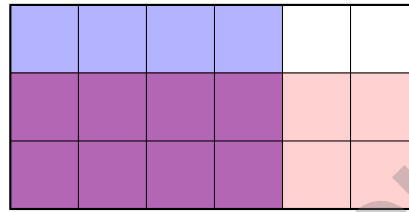
A.  $\frac{1}{4} \div 8 = n$

B.  $8 \div \frac{1}{4} = n$

C.  $8 \times 4 = n$

D.  $n = 32$

2) In an area model, one dimension is split into 6 equal parts and shaded 4 parts. The other dimension is split into 3 equal parts and shaded 2 parts. How many total unit squares are in the grid, and how many are double-shaded?



A. 18 total, 8 double-shaded

B. 18 total, 6 double-shaded

C. 18 total, 4 double-shaded

D. 12 total, 8 double-shaded

3) A prism has 8 cubes in each row, 3 rows per layer, and 2 layers. Total cubes?

*Record your answer in the space provided.*

4) What is  $7 \div \frac{1}{2}$ ?

A. 7

B. 10

C. 12

D. 14



## Grade 5 Mathematics Reference Materials

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1) Which pair of fractions already has a common denominator?

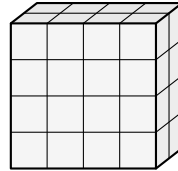
A.  $\frac{1}{6}$  and  $\frac{5}{9}$

B.  $\frac{1}{2}$  and  $\frac{3}{7}$

C.  $\frac{2}{3}$  and  $\frac{4}{5}$

D.  $\frac{3}{8}$  and  $\frac{7}{8}$

2) A box needs 32 unit cubes to be filled. It is 4 units long and 2 units wide. What must its height be?



A. 3 units

B. 7 units

C. 4 units

D. 2 units

3) A science measurement is 19.455 cm. Which shows correct rounding to nearest tenth?

A.  $19.455 \rightarrow 19.4$

B.  $19.455 \rightarrow 19.5$

C.  $19.455 \rightarrow 19.45$

D.  $19.455 \rightarrow 20$

4) Which expression represents “the sum of 15 and three times 4”?

A.  $15 + 3 \times 4$

B.  $3 \times (15 + 4)$

C.  $(15 + 3) \times 4$

D.  $15 \times 3 + 4$

5) If Pattern A: 2, 4, 6, 8, ... and Pattern B: 4, 8, 12, 16, ..., what is true?

A. Pattern A is larger

B. Pattern B terms are half of Pattern A terms

C. They are equal

D. Pattern B terms are twice Pattern A terms



## 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.**

Testinar.com



## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- Choice C is correct.** **(5.MD.2)** There are three ribbons at  $\frac{1}{2}$  yard. Their total length is  $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 1\frac{1}{2}$  yards.
- Choice A is correct.** **(5.OA.1)** First find how many students the 6 buses would hold:  $6 \times 32 = 192$ . Then subtract the 8 absent students:  $192 - 8 = 184$ .
- Choice D is correct.** **(5.NF.5b)**  $15 \times \frac{2}{5} = \frac{30}{5} = 6$  inches. The product is smaller because the scaling factor is less than 1.
- The correct answer is  $\frac{1}{2}$ .** **(5.NF.2)**  $\frac{1}{3} = \frac{2}{6}$ . Remaining:  $\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$ .
- Choice D is correct.** **(5.NF.7c)** Use total amount divided by the size of one piece. The equation is  $6 \div \frac{1}{5} = n$ .
- Choice C is correct.** **(5.NF.2)** LCD = 20.  $\frac{7}{10} = \frac{14}{20}$ ;  $\frac{1}{4} = \frac{5}{20}$ .  $\frac{14}{20} - \frac{5}{20} = \frac{9}{20}$ .
- Choice A is correct.** **(5.OA.2)** The first expression makes 3 copies of  $20 - 5$ . The second expression subtracts 3 copies of 5 from only one 20. The first expression is greater.
- Choice D is correct.** **(5.OA.3)** At step 4,  $W = 12$  and  $X = 4$ . The sum is  $12 + 4 = 16$ .
- Choice D is correct.** **(5.G.4)** A square is both a rectangle and a rhombus, so it belongs in the overlap.
- Choice B is correct.** **(5.MD.1)** 1 liter = 1,000 milliliters. Multiply:  $2 \times 1000 = 2000$  mL.
- Choice C is correct.** **(5.MD.5c)** A figure with four sides is a quadrilateral. The phrase “exactly one pair of parallel sides” describes the needed attribute without relying on a state-specific trapezoid definition.
- Choice D is correct.** **(5.NF.2)**  $\frac{5}{16}$  is not equivalent to  $\frac{1}{3}$  because  $1 \times 16 \neq 3 \times 5$ . The other choices simplify to  $\frac{1}{3}$ .
- Choice C is correct.** **(5.NF.6)** Four pieces means  $4 \times \frac{5}{8} = \frac{20}{8} = 2\frac{4}{8} = 2\frac{1}{2}$  yards.
- Choice B is correct.** **(5.G.3)** Two sides measure 9 cm (equal), and one side measures 5 cm (different). This is an isosceles triangle.
- Choice B is correct.** **(5.NBT.5)** Sum the partial products:  $400 + 10 + 360 + 9 = 779$ .
- The correct answer is  $72 \text{ cm}^3$ .** **(5.MD.5a)** Multiply the three dimensions:  $6 \times 4 \times 3 = 72 \text{ cm}^3$ .
- Choice D is correct.** **(5.NF.1)** Because  $\frac{1}{6}$  is smaller than  $\frac{5}{6}$ , regroup  $4\frac{1}{6}$  as  $3\frac{7}{6}$ . Then  $3\frac{7}{6} - 2\frac{5}{6} = 1\frac{2}{6}$ .
- Choice C is correct.** **(5.NBT.7)** Line up decimal points and subtract place by place. Unknown minuend:  $6.15 + 3.48 = 9.63$ . This confirms the answer.
- Choice B is correct.** **(5.NBT.3a)** The decimal 0.63 is read as “sixty-three hundredths” because there are two decimal places (hundredths position). Avoid using “point” or “and” when reading decimals less than 1.
- Choice B is correct.** **(5.G.4)** A rhombus is a quadrilateral with all four sides equal in length. It does not have to have four right angles.
- Choice A is correct.** **(5.MD.5a)** The original volume is  $15 \times 12 \times 10 = 1,800$  cubic centimeters. Splitting it into two equal non-overlapping parts gives  $1,800 \div 2 = 900$  cubic centimeters for each part.
- Choices A, B are correct.** **(5.NBT.2)**  $0.4 \times 100 = 40$  and  $7.2 \times 10 = 72$ . C should be 0.5, and D should be 180.
- Choice D is correct.** **(5.NF.5b)**  $\frac{5}{4} > 1 > \frac{3}{4}$ , so  $20 \times \frac{5}{4}$  is the greatest.
- Choice A is correct.** **(5.MD.5a)** Volume requires multiplication:  $V = 4 \times 3 \times 6 = 72 \text{ m}^3$ , not addition.
- Choice D is correct.** **(5.NBT.2)** The table shows  $44.8 \div 100 = 0.448$ . Move decimal 2 places left.
- Choice A is correct.** **(5.G.1)** If the y-coordinate is 0, the point is on the horizontal line (x-axis).
- Choice A is correct.** **(5.NBT.6)**  $288 \div 12 = 24$  pencils per classroom. Check:  $12 \times 24 = 288$ .
- Choice A is correct.** **(5.NF.1)** LCM(5,4) = 20.  $\frac{2}{5} = \frac{8}{20}$  and  $\frac{1}{4} = \frac{5}{20}$ .  $\frac{8}{20} + \frac{5}{20} = \frac{13}{20}$ .
- Choice C is correct.** **(5.NBT.2)** The product is 9 followed by the six zeros from 1,000,000, so it has 6 zeros.
- Choice B is correct.** **(5.NF.4)** Five copies of  $\frac{1}{6}$  make  $\frac{5}{6}$ . The denominator stays 6 because the size of each piece is still sixths.
- Choice B is correct.** **(5.NF.2)** Common denominator is 15.  $\frac{2}{5} = \frac{6}{15}$  and  $\frac{1}{3} = \frac{5}{15}$ . Since  $6 > 5$ ,  $\frac{2}{5} > \frac{1}{3}$ .
- Choice B is correct.** **(5.NBT.2)**  $52 \times 10 = 520$ . Multiply by 10 by appending one zero.



### Lab Notes for a Future Scientist

#### Dear Curious Scientist,

◇ 3 tests. Many experiments. Tons of data. You've been running a research project on yourself, and the results are clear: you are better at math today than you were when you started. That's what science calls progress, and you earned it. ◇

★ **What scientists know:** a failed experiment is still useful data. Every problem you missed taught you something. You used that data to adjust, retry, and improve. That's how science works. That's how you've been working. ★

#### Lab Results

- **Hypothesis:** CONFIRMED. Effort + practice = real growth.
- **Method:** STRONG. You try strategies, observe what works, and adjust.
- **Data Collection:** CAREFUL. You read carefully and copy numbers exactly.
- **Conclusion:** CONFIDENT. You're test-ready.

**Scientist's tip:** curious minds make great test-takers. On test day, be curious about each question. Ask, "What is this asking?" Ask, "What's the smartest way?" Then experiment, observe, and answer. You will do great.

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 Scientist (Keep Questioning)

# 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.



## WHAT'S INSIDE:



### 3 Full-Length Grade 5 Math Practice Tests

Realistic test format to build familiarity and confidence.



### Covers All Essential Math Topics

Fractions, decimals, geometry, measurement, data, number operations, and more.



### Build Strong Math Skills

Strengthen understanding and problem-solving through varied question types.



### Detailed Answer Key

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



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- ✓ Improve accuracy and speed
- ✓ Reduce test anxiety
- ✓ Achieve your best score!



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