

# 5

# FULL-LENGTH

# Ohio OST

## GRADE 5 MATH

### ★ PRACTICE TESTS ★



**5 FULL-LENGTH  
PRACTICE TESTS**



**COMPLETE  
STANDARDS  
REVIEW**



**SKILL PRACTICE,  
WORD PROBLEMS,  
AND MORE!**

$$\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$$



$$12 \times 3 = 36$$



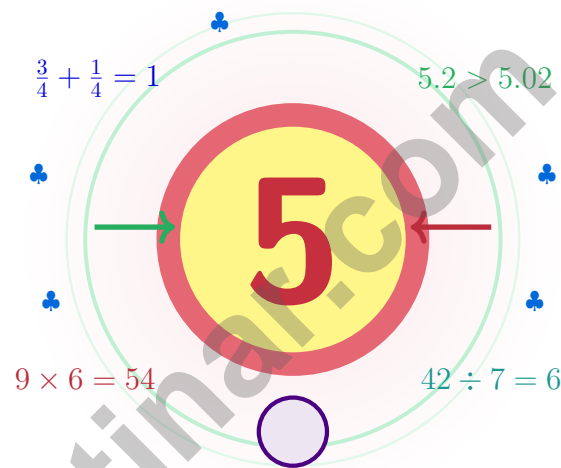
$$\frac{7}{10} = 0.7$$



**BUILT FOR SUCCESS. DESIGNED TO HELP EVERY STUDENT.**

# 5 Ohio OST Grade 5 Math Practice Tests

*Your practice journey starts here, one smart checkpoint at a time*



Five full tests, a friendly quick review, smart strategy pages, and student-tested support that turn Grade 5 practice in The Buckeye State into a steady quest of real growth.

**Jay Daie and Reza Nazari**



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# Welcome to the Math Quest, Ohio

Your practice journey starts here, one smart checkpoint at a time

## Quest Briefing for Ohio Grade 5 Math Crew

This book is your practice zone, not a place to be perfect. Each of the five tests gives you a chance to notice clues, choose a strategy, check your thinking, and come back stronger for the next round. Math is like an Ohio season – it changes, but the careful student notices what stays the same.

Some questions will feel easy right away. Some will make you slow down, draw, estimate, or retry. That is excellent news. It means your math brain is doing real work.

### Read Slow

Read every word, twice  
when needed.

### Choose Smart

Pick the operation,  
sketch, or table that fits.

### Grow

Lock the lesson in by  
reflecting after each  
problem.

**A strong quest habit for Ohio:** slow down, write neatly, estimate before you solve, and keep going even when a problem looks tricky at first. That is exactly how confident math students are built.

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# How to Use This Book

A simple routine that turns five tests into real growth

## Step 1: Set Up

**Pencil ready, distractions gone.**  
Wake up important ideas before you begin so your brain is ready to use them.

## Step 2: Work the Test

**Take a full test like the real day.**  
Find a quiet space, work carefully, and let accuracy matter more than speed.

## Step 3: Look Back

**Walk through your answers without rushing.**  
Circle missed questions and look for patterns. Which skill or habit needs another try?

## Step 4: Climb Higher

**Pick one or two skills to sharpen next.**  
Read the explanation, repair the work, and carry that lesson into the next test.

## A Five-Week Ohio Quest Map

Week	Mission Focus
Week 1	Take Test 1 like a long fall walk – soft pace, sharp eyes.
Week 2	Take Test 2 and notice one habit that grew steadier.
Week 3	Take Test 3 and lift fractions, decimals, and conversions.
Week 4	Take Test 4 and slow down on multi-step problems.
Week 5	Take Test 5 with calm, careful focus.



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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  $V = l \times w \times h$

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#### Customary

1 pound (lb) = 16 ounces (oz)

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

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### TIME

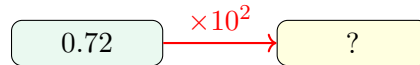
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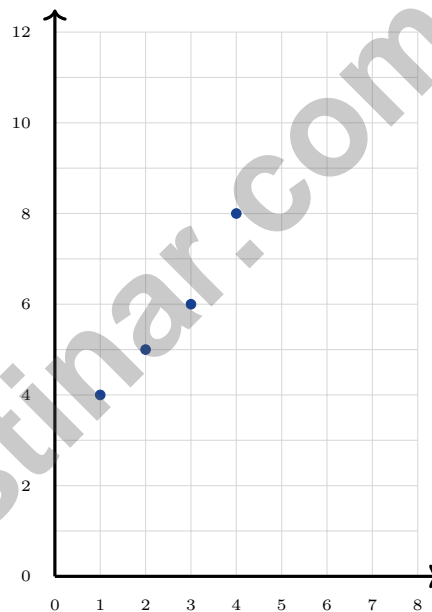
1 day = 24 hours (hr)    1 year = 52 weeks



- 1) Use the arrow diagram. How many places does the decimal point move when multiplying by  $10^2$ ?



- A. 1 place                       C. 3 places  
 B. 2 places                     D. 10 places
- 2) Which ordered pair shown does NOT belong to the pattern where the second coordinate is 3 more than the first?



- A. (1, 4)                       C. (3, 6)  
 B. (2, 5)                     D. (4, 8)



- 3) Pattern A: 0, 4, 8, 12. Pattern B: 0, 1, 2, 3. For the nonzero matching terms, what fraction of A is B?

*Record your answer in the space provided.*

- 4) A garden path is 20 meters long. If you want only  $\frac{1}{5}$  of that length, how long will your path be?

- A. 4 meters  C. 10 meters  
 B. 5 meters  D. 20 meters

- 5) A composite garden block is made from two non-overlapping rectangular prisms. Prism A is 4 centimeters long, 2 centimeters wide, and 4 centimeters tall. Prism B is 3 centimeters long, 3 centimeters wide, and 4 centimeters tall. What is the total volume?

- A. 68 cubic centimeters  C. 36 cubic centimeters  
 B. 32 cubic centimeters  D. 76 cubic centimeters

- 6) Estimate  $1,456 \div 48$  using rounding:

- A.  $1,500 \div 50 = 30$   C.  $1,500 \div 50 = 40$   
 B.  $1,400 \div 40 = 35$   D.  $1,400 \div 50 = 28$

- 7) Compare  $\frac{5}{4} \times 16$  to 16. Which is correct?

- A.  $\frac{5}{4} \times 16 < 16$   C.  $\frac{5}{4} \times 16 > 16$   
 B.  $\frac{5}{4} \times 16 = 16$   D. Cannot determine



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1) A fish tank has volume  $1440 \text{ cm}^3$  and dimensions 12 cm long and 10 cm wide. How deep is it?

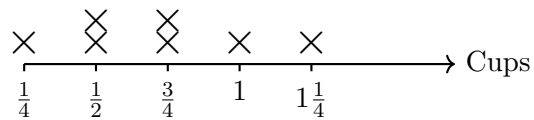
A. 10 cm

C. 14 cm

B. 12 cm

D. 16 cm

2) The line plot shows flour amounts, in cups, used in recipes:



What is the total amount of flour shown?

A.  $3\frac{1}{2}$  cups

C. 5 cups

B.  $4\frac{3}{4}$  cups

D.  $5\frac{1}{2}$  cups

3) Evaluate the expression:  $[(50 - 20) \div 5] + [3 \times (2 + 4)]$

*Record your answer in the space provided.*

4) How many zeros are in the product  $400 \times 25$ ?

A. 2

C. 4

B. 3

D. 5



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1) Which expression evaluates to exactly 100?

A.  $(20 + 5) \times 4$

B.  $20 \times (5 + 4)$

C.  $(5 \times 5) + 4$

D.  $5 \times (25 - 4)$

2) Find the difference:  $\frac{7}{10} - \frac{1}{2}$ .

*Record your answer in the space provided.*

3) Which statement about  $(30 + 20) \div 5$  and  $(30 \div 5) + (20 \div 5)$  is correct?

 A. First expression is larger B. Second expression is larger C. They are equal D. Cannot be compared

4) A pan has 16 equal brownie pieces. Malik eats  $\frac{3}{8}$  of the pan. How many brownie pieces does Malik eat?

 A. 4 pieces B. 5 pieces C. 6 pieces D. 8 pieces

5) A recipe for 8 servings uses 2.5 cups of flour. How much flour is needed for 24 servings?

 A. 7.5 cups B. 7.0 cups C. 6.5 cups D. 8.0 cups

## Grade 5 Mathematics Reference Materials

### PERIMETER AND AREA

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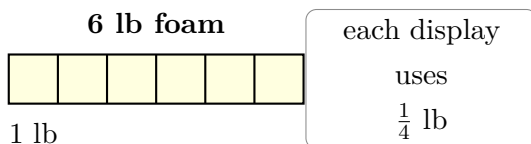
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- 1) A toy store has 6 pounds of modeling foam. Each action-figure display uses  $\frac{1}{4}$  pound of foam. How many displays can the store make?



- A. 24 displays                       C. 12 displays  
 B. 18 displays                       D. 28 displays
- 2) Which ordered pair is inside the first quadrant, not on an axis?
- A. (0, 4)                               C. (5, 7)  
 B. (4, 0)                               D. (0, 0)
- 3) Convert 4.5 kilometers to meters.
- A. 45 m                                   C. 4,500 m  
 B. 450 m                                 D. 45,000 m
- 4) What is  $24.63 - 18.97$ ?
- A. 5.66                                   C. 5.76  
 B. 6.34                                   D. 6.44
- 5) A baker makes cookies using  $\frac{1}{3}$ -cup batches of butter. How many batches are used if she uses 5 cups of butter total?



1 cup 1 cup 1 cup 1 cup 1 cup

5 cups split into one-third-cup batches

- A. 10                                       C. 15  
 B. 12                                       D. 20



## 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.NBT.2)**  $10^2 = 100$ ; multiplying by 100 moves the decimal 2 places to the right.
- 2) **Choice D is correct.** **(5.G.2)** The first three points have second coordinates 3 more than the first. For  $(4, 8)$ ,  $4 + 3 = 7$ , not 8.
- 3) **The correct answer is  $\frac{1}{4}$ .** **(5.OA.3)**  $1 = \frac{1}{4} \times 4$ ,  $2 = \frac{1}{4} \times 8$ , etc.
- 4) **Choice A is correct.** **(5.NF.5b)**  $20 \times \frac{1}{5} = 4$  meters. Multiplying by  $\frac{1}{5}$  scales the length down to one-fifth its original size.
- 5) **Choice A is correct.** **(5.MD.5c)** Find each part first: Prism A is  $4 \times 2 \times 4 = 32$  cubic centimeters, and Prism B is  $3 \times 3 \times 4 = 36$  cubic centimeters. Because the parts do not overlap, add them:  $32 + 36 = 68$  cubic centimeters.
- 6) **Choice A is correct.** **(5.NBT.6)** Round:  $1,456 \approx 1,500$  and  $48 \approx 50$ . So  $1,500 \div 50 = 30$ . Actual:  $1,456 \div 48 = 30$  R16.
- 7) **Choice C is correct.** **(5.NF.5b)**  $\frac{5}{4} > 1$ , so the product is greater than 16.
- 8) **Choice D is correct.** **(5.G.2)** The distance from  $(2, 2)$  to  $(6, 2)$  along the bottom is  $6 - 2 = 4$  units. All sides of a square are equal, so each side is 4 units long.
- 9) **Choice D is correct.** **(5.NBT.4)** The thousandths digit 6 tells whether to round up. Since  $6 \geq 5$ , the hundredths digit changes from 5 to 6.
- 10) **The correct answer is 32448.** **(5.NBT.5)**  $507 \times 4 = 2,028$  and  $507 \times 60 = 30,420$ . Sum:  $2,028 + 30,420 = 32,448$ .
- 11) **Choice D is correct.** **(5.OA.2)** The difference of 10 and 4 must stay grouped as  $(10 - 4)$ . Then multiply 9 by that whole difference.
- 12) **Choice A is correct.** **(5.MD.1)** Total time:  $20 + 30 = 50$  minutes. Total distance:  $3 + 4.5 = 7.5$  km = 7,500 meters.
- 13) **Choice D is correct.** **(5.NF.7c)**  $7 \div \frac{1}{2} = 7 \times 2 = 14$ . We need 14 bottles.
- 14) **Choice D is correct.** **(5.NF.2)** The number line shows the dot positioned at  $\frac{2}{3}$ . Multiplying the numerator and denominator by 2 gives  $\frac{2}{3} = \frac{4}{6}$ .
- 15) **The correct answer is  $3\frac{5}{8}$ .** **(5.NF.1)**  $6\frac{1}{4} = 6\frac{2}{8} = 5\frac{10}{8}$ . Subtract:  $(5 - 2) + (\frac{10}{8} - \frac{5}{8}) = 3\frac{5}{8}$ .
- 16) **Choice D is correct.** **(5.G.3)** The small square shows a right angle, and the tick marks show two sides are equal, making it isosceles right.
- 17) **Choice B is correct.** **(5.NF.5b)** First simplify:  $\frac{4}{6} = \frac{2}{3}$ . Then  $\frac{2}{3} \times \frac{3}{8} = \frac{6}{24} = \frac{1}{4}$ .
- 18) **Choices A, B are correct.** **(5.NF.2)** The LCM of 3 and 5 is 15, so A is true. Also,  $\frac{1}{3} = \frac{5}{15}$ , so B is true. C adds denominators, and D miscalculates.
- 19) **The correct answer is  $2\frac{1}{2}$  m.** **(5.NF.6)**  $3 \times \frac{5}{6} = \frac{15}{6} = \frac{5}{2} = 2\frac{1}{2}$  m.
- 20) **Choice A is correct.** **(5.NBT.2)** Dividing by  $10^3 = 1,000$  makes the number smaller. The decimal point shifts three places to the left (one place per power of 10).
- 21) **Choice D is correct.** **(5.NF.7c)** Start with one unit fraction,  $\frac{1}{2}$ , and share it into 4 equal parts. Each part is  $\frac{1}{2} \div 4 = \frac{1}{8}$  of the whole.
- 22) **Choice C is correct.** **(5.MD.5)** Choose the operation from the story, then keep the unit with the answer. Subtract:  $64.75 - 8.50 = 56.25$  dollars. This confirms the answer.
- 23) **Choice B is correct.** **(5.G.4)** A rectangle has 4 sides and 4 right angles, so it has both properties.
- 24) **Choice A is correct.** **(5.NBT.2)**  $73 \times 10 \times 10 = 730 \times 10 = 7,300$ , which equals  $73 \times 100$ .
- 25) **Choice A is correct.** **(5.MD.5a)**  $V = l \times w \times h = 12 \times 8 \times 5 = 480$  cm<sup>3</sup>.
- 26) **Choice D is correct.** **(5.MD.5)** The base layer has  $10 \times 3 = 30$  square units. Divide the volume by the base area:  $90 \div 30 = 3$ , so the height is 3 meters.
- 27) **Choice A is correct.** **(5.NBT.7)** Combine grids:  $8 + 9 = 17$  shaded squares, which is 0.17 (regroup to 0 ones + 1 tenth + 7 hundredths).
- 28) **Choice A is correct.** **(5.G.4)** A rectangle has two pairs of parallel sides, so it is a special type of parallelogram. Every parallelogram is also a quadrilateral because it has four sides.
- 29) **Choice A is correct.** **(5.NF.5b)**  $2\frac{1}{2} \times 5 = \frac{5}{2} \times 5 = \frac{25}{2} = 12\frac{1}{2}$  dollars.



---

**Research Conclusion Report**

---

## Greetings, Research Fellow!

★ Research breakthrough achieved! You've completed five comprehensive mathematical investigations, testing hypotheses, analyzing variables, and reaching valid conclusions like a dedicated researcher! Each problem represented a unique research question, and you approached every one with scientific rigor and methodical thinking. Your research methodology has become exemplary! ★

◇ **Here's what distinguished researchers know:** breakthrough discoveries come from persistent investigation and careful analysis. They replicate experiments to verify results and document findings meticulously. You've practiced that same scientific discipline through these five tests! Your mathematical research skills are now publication-ready! ◇

### Research Quality Metrics

1. **Methodology:** Your problem-solving approaches are systematic and logical!
2. **Data Analysis:** You evaluate information thoroughly before concluding!
3. **Verification:** You confirm results carefully to ensure accuracy!
4. **Publication Ready:** Your research stands up to peer review standards!

**Research principle:** credible scientists verify their findings before sharing conclusions. On test day, apply that same careful verification standard. After solving each problem, check whether your answer makes logical sense. Review your calculations. Confirm your reasoning. You've practiced scientific verification five times trust your research instincts!

Want to share groundbreaking mathematical research or discuss experimental methodologies? Submit your findings to [reza@testinar.com](mailto:reza@testinar.com). The scientific community values your contributions!

**Reza Nazari & Jay Daie**

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