

# 4 Ohio OST

GRADE  
**6**  
MATH

## PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs

**4**

**PRINTED  
TESTS**



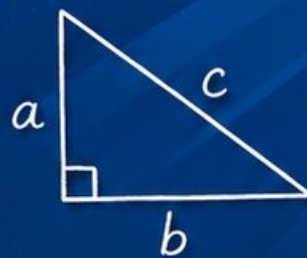
**2**

**ONLINE  
TESTS**



- ✓ Build Confidence
- ✓ Master Key Math Skills
- ✓ Answer Explanations for Every Question
- ✓ Test-Taking Strategies That Work

$$2x + 5 = 21$$
$$x = 8$$



$$\frac{3}{4} + \frac{1}{2} = \frac{5}{4}$$



**USE THESE TWO  
ADDITIONAL ONLINE  
PRACTICE TESTS**

**FOR EXTRA REVIEW AFTER  
THE PRINTED TESTS  
IN THIS BOOK.**

# 4 Ohio OST Grade 6 Math Practice Tests

*Standards-Aligned Buckeye-State Problem Solving for Ohio's State Tests*



Four complete 40-question Grade 6 practice rounds for OST, built for Buckeye-state problem solving with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

**Jay Daie and Reza Nazari**



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# Welcome, Ohio Math Explorer!

Four focused rounds using Buckeye-state problem solving

This book gives you four full Grade 6 practice tests for OST. Each round uses lake edges, city routes, and classroom-ready strategy as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your Ohio Practice Promise

Use a clear game plan: underline the task, write the math, and check the choice.

Read

Plan

Check

## How to Use This Book

A four-session routine for Buckeye-state problem solving

1. **Work in order.** Take one 40-question test at a time in a quiet place.
2. **Preview the skills.** Scan the quick review pages before beginning the first round.
3. **Correct actively.** Retry missed items before reading the full explanation.
4. **Mark confidence.** Put a small star beside problems where your plan felt strong.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

**Ohio review rhythm:** Take a round, review what changed your answer, and carry that habit forward.



## What Is Inside?

Four OST tests, 160 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–4	Skill-building and final stamina rounds with expressions, equations, geometry, data, and problem models.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Buckeye-state problem solving means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



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For more practice  
& answers

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1) Which expression is equivalent to  $3(x + 2) + 2x$ ?

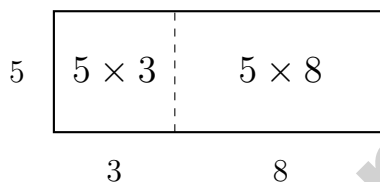
A.  $5x + 6$

C.  $3x + 6 + 2x$

B.  $5x + 2$

D.  $6x + 2$

2) A student tries to use the area model below to find  $5(3 + 8)$  but makes an error. The student writes:  $5(3 + 8) = 15 + 8 = 23$ . What is the error?

 A. 5 was only distributed to the first term C.  $5(3 + 8)$  should simplify to 55, not 23 B. The sum  $3 + 8$  should equal 11, not both terms D. Choices A and C are both correct

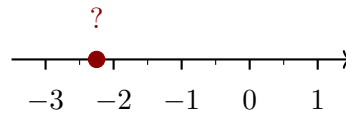
3) A diver starts at sea level (elevation 0). The diver descends 12 meters. What is the diver's elevation?

 A. 12 meters C. 0 meters B.  $-12$  meters D. 24 meters

4) The opposite of the opposite of 8 is:

 A. 8 C. 0 B.  $-8$  D. 16

5) Which number line correctly shows the position of  $-2.25$ ?



- A. Halfway between  $-3$  and  $-2$        C. At  $-2$   
 B. Halfway between  $-2.5$  and  $-2$        D. Halfway between  $-2$  and  $-1$
- 6) A number is  $0.67$ . Write this as a percent.

7) Which point would be closest to the origin?

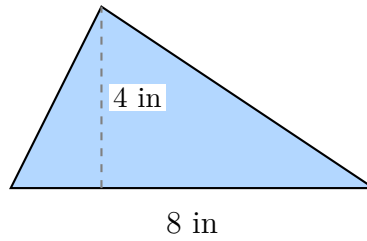
- A.  $(-5, 7)$        C.  $(-8, 6)$   
 B.  $(3, -2)$        D.  $(0, -4)$
- 8) A car rental requires drivers to be at least 18 years old. Which inequality represents this requirement?
- A.  $d > 18$        C.  $d \leq 18$   
 B.  $d < 18$        D.  $d \geq 18$
- 9) A printer produces pages at a rate of 20 pages per minute. How many pages are printed in 3.5 minutes?

- A. 60 pages       C. 75 pages  
 B. 65 pages       D. 70 pages



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10) A triangle has a base of 8 inches and a height of 4 inches. What is its area?



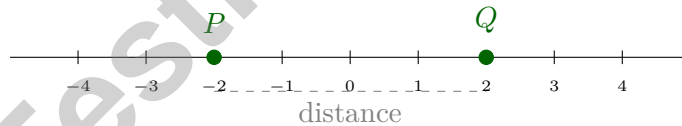
- A.  $12 \text{ in}^2$                        C.  $32 \text{ in}^2$   
 B.  $64 \text{ in}^2$                        D.  $16 \text{ in}^2$

11) A small box is 7 cm long, 3 cm wide, and 2 cm tall. What is its volume?

- A.  $12 \text{ cm}^3$                        C.  $28 \text{ cm}^3$   
 B.  $21 \text{ cm}^3$                        D.  $42 \text{ cm}^3$

12) A horizontal line segment goes from  $(2, 7)$  to  $(10, 7)$ . What is its length?

- A. 6 units                       C. 8 units  
 B. 7 units                       D. 9 units



13)

The distance between  $P$  and  $Q$  is:

- A. 2 units                       C. 4 units  
 B. 0 units                       D.  $-4$  units



1) A pencil is 150 millimeters long. How many centimeters long is the pencil? (Use 1 centimeter = 10 millimeters.)

A. 15 cm

C. 1.5 cm

B. 1500 cm

D. 150 cm

2) A student rewrites a non-statistical question to make it statistical. Which is the BEST rewrite?

Original: "How old is my teacher?"

A. How old are the teachers at our school?

C. How many teachers are there?

B. In what year was my teacher born?

D. What is the average age of all teachers in the United States?

3) A dataset's box plot is perfectly symmetric (whiskers are equal length, and the median is exactly between  $Q_1$  and  $Q_3$ ). Which statement must be true?

A. The distribution is symmetric around the median.

C. The mean equals the median.

B. The data has no outliers.

D. All data values are equally spaced.

4) The probability that a randomly selected student in a class plays soccer is  $\frac{2}{3}$ . If there are 24 students in the class, how many play soccer?

A. 8

C. 16

B. 12

D. 18



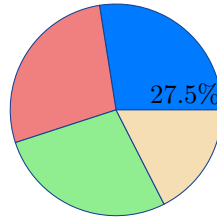
5) Using the same stem-and-leaf plot from Question 2, what is the range of heights?

A. 35 cm

B. 30 cm

C. 25 cm

D. 40 cm



6)

A survey asked 360 people about favorite season. The circle graph shows 27.5% prefer summer. How many people prefer summer?

A. 99

B. 90

C. 108

D. 117



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1) Write an expression for “a number  $p$  increased by the product of 5 and 3”.

A.  $p(5 + 3)$

C.  $p + 5 + 3$

B.  $(p + 5) \cdot 3$

D.  $p + 5 \cdot 3$

2) A circle has circumference 12.6 inches and diameter 4 inches. Find the ratio  $C/d$ .

3) A museum exhibit uses a scale model where 1 inch = 7 feet. If the actual hall is 91 feet long, how many inches should the model be?

A. 13 inches

C. 98 inches

B. 84 inches

D. 637 inches

4) Evaluate:  $\frac{1}{2} \div \frac{1}{8}$

A.  $\frac{1}{16}$

C.  $\frac{1}{4}$

B. 4

D. 16

5) Divide 7,600 by 25 using long division.

A. 304

C. 310

B. 300

D. 312



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& answers

6) A student incorrectly computed  $4.2 \times 0.5 = 2.10$  instead of 2.1. Which statement is true?

- A. The student made an error; trailing zeros should be removed.
- B. Both answers are equivalent in value.
- C. The decimal point is in the wrong place.
- D. The student forgot to multiply.

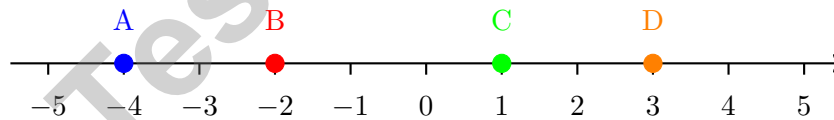
7) If the temperature at noon was  $12^{\circ}\text{C}$  and it dropped  $20^{\circ}\text{C}$  by midnight, what was the temperature at midnight?

- A.  $32^{\circ}\text{C}$
- B.  $20^{\circ}\text{C}$
- C.  $8^{\circ}\text{C}$
- D.  $-8^{\circ}\text{C}$

8) The absolute value of a negative number is:

- A. Always negative
- B. Always positive
- C. Always zero
- D. Sometimes negative and sometimes positive

9) The number line below shows points labeled A, B, C, and D. Which point represents the number  $-2$ ?



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



## Ohio OST Practice Test Answer Keys

### How to use this Ohio OST answer section with a Grade 6 student:

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to Buckeye-state problem solving

3. rework the problem before reading the full explanation, using this reminder:

Use a clear game plan: underline the task, write the math, and check the choice.

**A calm Ohio correction routine turns every missed item into useful practice. Take a round, review what changed your answer, and carry that habit forward.**

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## Ohio Practice Test Answers and Explanations

Review the four printed OST tests with prepared, steady, and ready for the next question habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **6.EE.3** Distribute then combine:  $3x + 6 + 2x = 5x + 6$ .
- 2) **Choice D is correct.** **6.NS.4** The student only multiplied  $5 \times 3 = 15$  instead of distributing to both terms. The correct solution is  $5(3 + 8) = 5 \cdot 3 + 5 \cdot 8 = 15 + 40 = 55$ . The area model shows both parts, confirming both must be distributed to.
- 3) **Choice B is correct.** **6.NS.5** Descent below sea level is represented by a negative elevation. A descent of 12 meters is an elevation of  $-12$  meters.
- 4) **Choice A is correct.** **6.NS.7c** Opposite of 8 is  $-8$ . Opposite of  $-8$  is 8. Double opposites return to the original.
- 5) **Choice B is correct.** **6.NS.6c**  $-2.25$  is exactly halfway between  $-2.5$  and  $-2$ , found by:  $\frac{-2.5 + (-2)}{2} = -2.25$ .
- 6) **The correct answer is 67%.** **6.RP.3c** Multiply the decimal by 100:  $0.67 \times 100 = 67\%$ .
- 7) **Choice B is correct.** **6.NS.8** To estimate closeness, compare the absolute values of the coordinates. The point  $(3, -2)$  has the smallest coordinate values ( $|3| = 3$  and  $|-2| = 2$ ), making it closest to the origin  $(0, 0)$ .
- 8) **Choice D is correct.** **6.EE.8** "At least 18" means "greater than or equal to 18," so the inequality is  $d \geq 18$ .
- 9) **Choice D is correct.** **6.EE.9** Pages printed = rate  $\times$  time = 20 pages/min  $\times$  3.5 min = 70 pages.
- 10) **Choice D is correct.** **6.G.1** Using  $A = \frac{1}{2}bh$ , we get  $A = \frac{1}{2} \times 8 \times 4 = 16 \text{ in}^2$ .
- 11) **Choice D is correct.** **6.G.2**  $V = 7 \times 3 \times 2 = 21 \times 2 = 42 \text{ cm}^3$ .
- 12) **Choice C is correct.** **6.G.3** For a horizontal segment:  $10 - 2 = 8$  units.
- 13) **Choice C is correct.** **6.NS.7d**  $P = -2$  and  $Q = 2$ . Distance =  $2 - (-2) = 4$  units.
- 14) **Choice C is correct.** **6.G.1** Area of a parallelogram = base  $\times$  height =  $8 \times 5 = 40 \text{ m}^2$ .
- 15) **Choice A is correct.** **6.SP.5c** A higher MAD indicates greater average distance from the mean, so Set X with MAD = 3.5 has more spread than Set Y with MAD = 1.8.
- 16) **Choice C is correct.** **6.SP.4** Looking at the histogram, Interval 3 (the middle bar) has a height of 30, which is the highest frequency.
- 17) **Choice B is correct.** **6.SP.5d** Mean =  $(2 + 3 + 4 + 5 + 6 + 8 + 10 + 15)/8 = 53/8 = 6.625$ . Median =  $(5 + 6)/2 = 5.5$ . The single outlier of 15 pulls the mean up. For stability assessment, median better reflects typical performance, ignoring the anomalous high month.
- 18) **Choice A is correct.** **6.NS.7d** Food is 25% of the budget:  $0.25 \times \$1200 = \$300$ .
- 19) **Choice B is correct.** **6.NS.7d** Using  $w = 8t$  (water = 8 ounces per second): after 5 seconds,  $w = 8 \times 5 = 40$  ounces. The graph passes through the origin, not  $(0, 8)$ .
- 20) **Choice C is correct.** **6.EE.9** Rent is 30% of income:  $0.30 \times 2000 = \$600$ .
- 21) **The correct answer is The constant of proportionality is 4, and the cost per unit is \$4.** **6.RP.3a** A is correct because  $k = \frac{8}{2} = 4$ . B is correct because the cost per unit is \$4. The equation is  $y = 4x$ , so Choice C is false; Choice D is false because the graph passes through  $(0, 0)$ ; Choice E gives the wrong unit rate.
- 22) **Choice C is correct.** **6.RP.3** Multiply:  $7 \times 2 = 14$  feet.
- 23) **Choice D is correct.** **6.NS.1**  $\frac{3}{5} \times 2 = \frac{6}{5}$ .
- 24) **Choice A is correct.** **6.NS.2**  $8,190 \div 26 = 315$ . Check:  $26 \times 315 = 8,190$ .
- 25) **The correct answer is 60.** **6.RP.3c** Markup is 50% of  $\$40 = 0.50 \times 40 = \$20$ . Selling price is  $\$40 + \$20 = \$60$ .
- 26) **Choice A is correct.** **6.NS.3**  $52 \times 3 = 156$ . Since 5.2 has one decimal place, the product is 15.6.
- 27) **Choice B is correct.** **6.NS.4** For option B: factors of 8 are 1, 2, 4, 8 and factors of 15 are 1, 3, 5, 15. They share only 1. For A, GCF is 6; for C, GCF is 10; for D, GCF is 3.



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## Hi, Math Champion!

◇ You trained hard! 4 full practice tests is real practice. Your math game is way better now than when you started. ◇

★ **Coach's truth:** kids who practice get better. You practiced. You got better. That's how it works!

★

### Your Game Stats

- **Energy:** HIGH! You can finish a long test.
- **Smart Plays:** You know lots of strategies.
- **Calm Head:** You stay cool with hard problems.
- **Game-Day Ready:** You feel strong and prepared.

**Coach's tip:** the night before the test, get good sleep. Eat a good breakfast. Bring a sharp pencil. Trust your training!

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Coach

# PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 4 full-length Math practice tests and 2 online tests to help Grade 6 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:

**4** 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 & Rates
- ✓ Percents
- ✓ The Number System
- ✓ Statistics & Probability
- ✓ Expressions & Equations
- ✓ Data Analysis
- ✓ Geometry
- ✓ Measurement & Conversions
- ✓ Fractions & Decimals
- ✓ And More!



## 2 ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.



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AND LEARNING RESOURCES



PRACTICE  
REGULARLY



STAY  
FOCUSED



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