

10 Oklahoma OSTP

GRADE
8
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

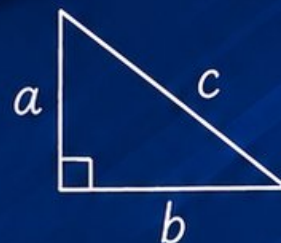
10 PRINTED
TESTS



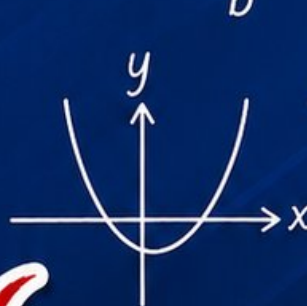
2 ONLINE
TESTS



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



$$y = mx + b$$



$$3x - 7 = 2(x + 5)$$
$$x = 17$$

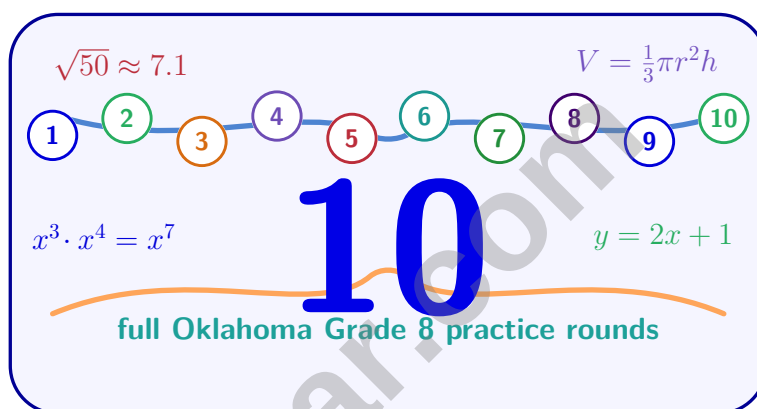


USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

10 Oklahoma OSTP Grade 8 Math Practice Tests

Oklahoma Grade 8 OSTP Practice for careful Grade 8 preparation in real numbers, functions, equations, geometry, data, and probability



Ten complete 40-question Grade 8 OSTP practice rounds with linear relationships, scientific notation, real numbers, equations, functions, geometry, data analysis, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Oklahoma Grade 8 Problem Solver!

Ten focused rounds for sharper Oklahoma OSTP math thinking

This book gives you ten full Grade 8 OSTP math practice tests. Each round is built to help you notice structure, compare quantities, use linear reasoning, handle real numbers, and explain your thinking with care.

Grade 8 standards focus: This page supports **Similarity and Dilations** (PA.GM.1.1): Similarity and dilations are not a dedicated OAS Pre-Algebra standard. A second useful connection is **Estimating Irrational Numbers** (PA.N.1.4): Estimate and compare the value of irrational numbers using rational approximations.

Your Oklahoma Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A ten-session plan for confident Grade 8 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Grade 8 standards focus: Keep the routine connected to **Finding Distance with the Pythagorean Theorem** (PA.GM.1.2): Apply the Pythagorean Theorem to find distances. It also prepares you for **Understanding Scientific Notation** (PA.N.1.2): Express and compare quantities in scientific notation.

Oklahoma review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Ten Oklahoma OSTP tests, 400 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Linear relationships, integer exponents, scientific notation, real-number reasoning, and careful reading.
Tests 4–6	Expressions, equations, inequalities, transformations, geometry, and multi-step problem solving.
Tests 7–9	Data analysis, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final Oklahoma round to show growth across the whole book.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.

Grade 8 standards focus: Use these habits while practicing **Scatter Plots and Patterns in Data** (PA.D.1.1): Construct and interpret scatter plots. Another recurring target is **Solving Linear Equations in One Variable** (PA.A.3.1): Solve linear equations in one variable with rational coefficients.



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& answers

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1) $(6.5 \times 10^5) - (3.2 \times 10^5) = ?$

☐ A. 3.3×10^0

☐ B. 9.7×10^5

☐ C. 3.3×10^5

☐ D. 0.33×10^5

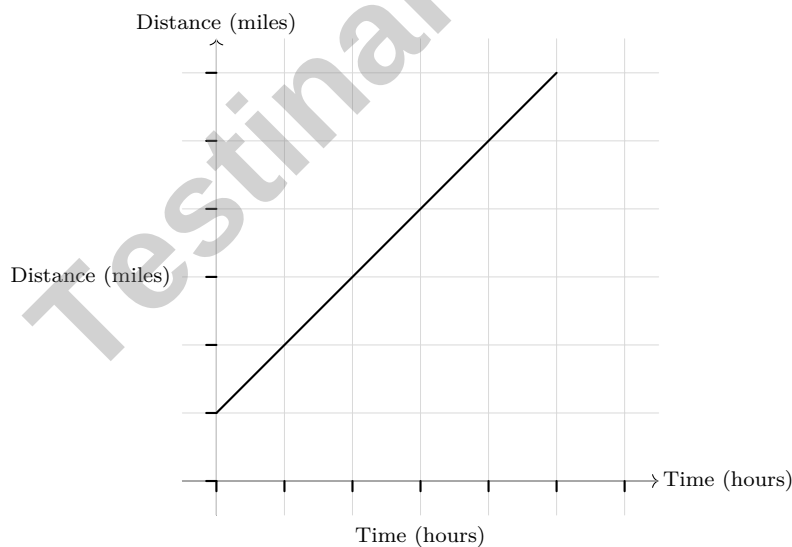
2) A rectangular prism has length 10 ft, width 5 ft, and surface area 250 ft². What is its height?

☐ A. 3 ft

☐ B. 4 ft

☐ C. 5 ft

☐ D. 6 ft

3) A line has slope -2 and passes through $(1, 4)$. What is its y -intercept?

4)

A distance-time line is shown. What is the y -intercept?

☐ A. 0

☐ B. 1

☐ C. 5

☐ D. 6



5) A bike travels at 12 miles per hour. The equation is $d = 12t$, where d is distance in miles and t is time in hours. How far does the bike travel in 3.5 hours?

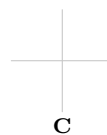
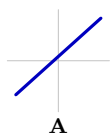
☐ A. 30 miles

☐ C. 42 miles

☐ B. 36 miles

☐ D. 48 miles

6) Which graph does NOT represent a function?



☐ A. A line passing through $(0, 2)$ and $(2, 6)$.

☐ C. A curve shaped like a sideways parabola opening right.

☐ B. A horizontal line at $y = 5$.

☐ D. A diagonal line with negative slope.

7) f passes through $(2, 5)$ and $(4, 1)$. $g(x) = -x + 8$. Which has a more negative slope?

☐ A. $f(x)$

☐ C. Both equal.

☐ B. $g(x)$

☐ D. Not comparable.

8) What is the first difference for the sequence 5, 13, 21, 29?

☐ A. 8 (constant, so linear)

☐ D. Cannot be determined without the x -values

☐ B. 5 (not constant, so nonlinear)

☐ C. The differences vary, so nonlinear

9) A gym charges a \$25 sign-up fee plus \$15 per month. Which function gives the total cost C after m months?

☐ A. $C = 15m + 25$

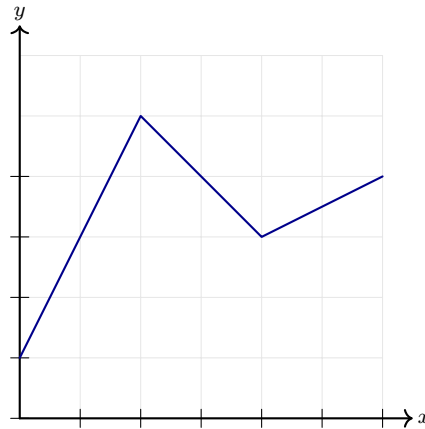
☐ C. $C = 40m$

☐ B. $C = 25m + 15$

☐ D. $C = 15m - 25$



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10)

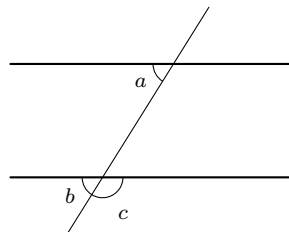
Identify the maximum value and where it occurs.

☐ A. Max = 1 at $x = 4$
☐ C. Max = 3 at $x = 1$
☐ B. Max = 3 at $x = 2$
☐ D. Max = 4 at $x = 6$

11) Point P is translated 6 units left and 8 units up to form point P'. If P is at $(3, -2)$, what are the coordinates of P'?

☐ A. $(-3, 6)$
☐ C. $(-3, -10)$
☐ B. $(9, 6)$
☐ D. $(9, -10)$

12) Two parallel lines are cut by a transversal. If angle $a = 52^\circ$, and angles a and b are corresponding angles, what is angle c if it is supplementary to angle b ?


☐ A. 52°
☐ C. 128°
☐ B. 104°
☐ D. 180°


- 1) A cube has a volume of 1000 cubic inches. What is the length of one edge?
- ☐ A. 9 inches ☐ C. 11 inches
☐ B. 12 inches ☐ D. 10 inches
- 2) A trend line has equation $y = 2.5x - 5$. What would be the predicted value of y when $x = 10$?
- ☐ A. 30 ☐ C. 20
☐ B. 25 ☐ D. 15
- 3) A figure is dilated by a scale factor of 3. How does the length of each side change?
- ☐ A. Divided by 3 ☐ C. Unchanged
☐ B. Multiplied by 3 ☐ D. Increased by 3 inches
- 4) The table below shows values of function f . What is $f(2)$?
- | | | | | |
|--------|---|---|---|----|
| x | 0 | 1 | 2 | 3 |
| $f(x)$ | 5 | 7 | 9 | 11 |
- ☐ A. 7 ☐ C. 11
☐ B. 9 ☐ D. 5
- 5) Which shows an error in classification?
- ☐ A. $\sqrt{36} = 6$ is classified as rational ☐ C. $0.\overline{27}$ is classified as irrational
☐ B. π is classified as irrational ☐ D. $\sqrt{50}$ is classified as irrational
- 6) Convert $0.\overline{27}$ to a fraction in simplest form.
- ☐ A. $\frac{27}{100}$ ☐ C. $\frac{27}{90}$
☐ B. $\frac{27}{99}$ ☐ D. $\frac{5}{18}$



7) Which is the correct scientific notation for the standard form 0.0031?

☐ A. 3.1×10^3

☐ B. 3.1×10^{-2}

☐ C. 31×10^{-4}

☐ D. 3.1×10^{-3}

8) Which value is irrational?

☐ A. $\sqrt{16}$

☐ B. $\sqrt{9}$

☐ C. $\sqrt{7}$

☐ D. $\sqrt{25}$

9) A piggy bank has nickels and dimes totaling \$2.75. There are twice as many dimes as nickels. How many nickels are in the bank?

10) Which is the best estimate of $\pi\sqrt{2}$?

☐ A. 2.8

☐ B. 3.1

☐ C. 4.4

☐ D. 6.3

11) A cylindrical storage tank has a radius of 2.5 m and height of 4 m. What is the total surface area (including top and bottom)? Use $\pi \approx 3.14$.

☐ A. 62.8 m^2

☐ B. 82.25 m^2

☐ C. 102.05 m^2

☐ D. 128.1 m^2



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- 1) Two complementary angles are in the ratio 3 : 7. What is the measure of the smaller angle?

- ☐ A. 18°
☐ C. 27°
☐ B. 21°
☐ D. 30°

- 2) Complete the table by applying exponent laws:

Start	Law	Result
$3^5 \cdot 3^2$	Add exponents	$3^?$

What is the exponent in the result?

- ☐ A. 3
 ☐ C. 15
☐ B. 10
 ☐ D. 7

- 3) Which number is closest to $\sqrt{50}$?

- ☐ A. 6
 ☐ C. 7.1
☐ B. 7
 ☐ D. 9

- 4) Three points lie on the same line: (1, 5), (3, 9), and (x, 13). What is the value of x?

- ☐ A. 4
 ☐ C. 6
☐ B. 7
 ☐ D. 5

- 5) A coffee shop has fixed costs of \$400 per day and variable costs of \$2 per cup sold. If cups sell for \$5 each, about how many cups must be sold to break even?

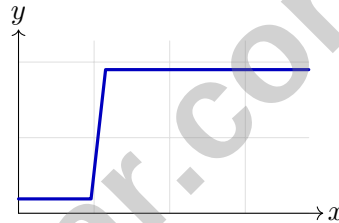
- ☐ A. 100 cups
 ☐ C. 134 cups
☐ B. 120 cups
 ☐ D. 160 cups



- 6) The table has points $(0, -3)$, $(2, -1)$, and $(4, 1)$. What is its rate of change?

x	0	2	4
y	-3	-1	1

- 7) A graph displays cumulative rainfall over a month. Which scenario matches a graph with a steep jump, then a flat section?



- ☐ A. Heavy rain one day, then no rain for several days
- ☐ B. Light rain every day for a month at a constant rate
- ☐ C. No rain for a week, then a single light drizzle
- ☐ D. Rain that decreases over time
- 8) Hexagon ABCDEF is congruent to hexagon GHIJKL. The perimeter of ABCDEF is 48 cm. What is the perimeter of GHIJKL?

- ☐ A. 24 cm
- ☐ B. 48 cm
- ☐ C. 96 cm
- ☐ D. Cannot be determined



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Oklahoma OSTP Grade 8 Practice Test Answer Keys**How to use this section with a Grade 8 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Oklahoma OSTP practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (PA.N.1.3) Same exponents: $(6.5 - 3.2) \times 10^5 = 3.3 \times 10^5$.
- 2) **Choice C is correct.** (PA.GM.2.2) Use $SA = 2(lw + lh + wh)$. Then $250 = 2(10 \times 5 + 10h + 5h) = 100 + 30h$, so $150 = 30h$ and $h = 5$ ft.
- 3) **The correct answer is 6.** (PA.A.2.4) Using $y = -2x + b$ and $(1, 4)$ gives $4 = -2 + b$, so $b = 6$.
- 4) **Choice B is correct.** (PA.D.1.3) The line crosses the y -axis at $(0, 1)$, so the y -intercept is 1.
- 5) **Choice C is correct.** (PA.A.2.2) Substitute $t = 3.5$: $d = 12(3.5) = 42$ miles. The proportional relationship scales with time.
- 6) **Choice C is correct.** (PA.A.1.1) A sideways parabola (opening right or left) fails the vertical line test because some vertical lines intersect it twice. The other options all pass the vertical line test.
- 7) **Choice A is correct.** (PA.A.1.3) Slope of f : $(1 - 5)/(4 - 2) = -4/2 = -2$. Slope of g : -1 . Comparing: -2 is further left on the number line than -1 , so f with slope -2 is more negative than g with slope -1 .
- 8) **Choice A is correct.** (PA.A.2.1) The differences are $13 - 5 = 8$, $21 - 13 = 8$, $29 - 21 = 8$. A constant difference of 8 indicates a linear function.
- 9) **Choice A is correct.** (PA.A.2.5) The sign-up fee \$25 is a one-time cost (the y -intercept, the value when $m = 0$). The monthly rate \$15 is the slope (rate of change per month). Therefore, $C = 15m + 25$. The slope tells how much additional cost per month; the intercept tells the starting cost.
- 10) **Choice B is correct.** (PA.A.2.1) The highest point on the graph is at the second vertex, $(2, 3)$. All other points are lower.
- 11) **Choice A is correct.** (PA.GM.1.1) Subtract 6 from the x -coordinate and add 8 to the y -coordinate: $(3 - 6, -2 + 8) = (-3, 6)$.
- 12) **Choice C is correct.** (PA.GM.1.1) Since a and b are corresponding angles with parallel lines, $b = a = 52^\circ$. If c is supplementary to b , then $c = 180 - 52 = 128^\circ$.
- 13) **Choice B is correct.** (PA.GM.1.1) Correct: $5^2 + 12^2 = 25 + 144 = 169$, so $c = 13$. The error was adding legs directly instead of applying the Pythagorean Theorem.
- 14) **Choice A is correct.** (PA.GM.1.2) $d = \sqrt{(8 - 2)^2 + (13 - 5)^2} = \sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$.
- 15) **Choice B is correct.** (PA.GM.2.1) Use $V = \pi r^2 h$: $942 = 3.14 \times r^2 \times 12$. Since $3.14 \times 12 = 37.68$, $r^2 = 942 \div 37.68 = 25$, so $r = 5$ cm.
- 16) **Choice C is correct.** (PA.GM.1.1) Trapezoid area $= \frac{1}{2}(6 + 10) \times 5 = 40 \text{ cm}^2$. Rectangle area $= 10 \times 3 = 30 \text{ cm}^2$. Total $= 40 + 30 = 70 \text{ cm}^2$.
- 17) **Choice B is correct.** (PA.GM.2.3) A hexagon's interior angles add to 720° . The known angles add to $88 + 112 + 95 + 118 + 147 = 560^\circ$, so the sixth angle is $720 - 560 = 160^\circ$.
- 18) **Choice C is correct.** (PA.D.1.1) Joint relative frequency divides the cell count (240) by the grand total $(480) = 0.50$. Options A and B are conditional frequencies; D is a marginal.
- 19) **The correct answer is $(3, 6)$.** (PA.A.4.1) Substitute $y = 2x$ into $x + y = 9$: $x + 2x = 9$, so $3x = 9$, giving $x = 3$. Then $y = 2(3) = 6$.
- 20) **The correct answer is A,C.** (PA.D.2.1) A is correct: $P(\text{heads}) = \frac{1}{2}$. C is correct: $P(\text{heads and 4}) = \frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$. B is wrong: $P(4) = \frac{1}{6}$. D is wrong: total outcomes $= 12$. E is wrong: $P(\text{not heads}) = \frac{1}{2}$.
- 21) **Choice D is correct.** (PA.A.1.2) Total installment cost: $250 + 150 \times 12 = 250 + 1800 = \$2,050$. Finance charge: $2050 - 1500 = \$550$.
- 22) **Choice C is correct.** (PA.N.1.1) The diagram shows the product rule (add exponents). (C) uses it: $2^{4+5} = 2^9$. (A) is power of product, (B) is quotient rule, (D) is power of power.
- 23) **Choice D is correct.** (PA.N.1.1) $5.5^2 = 30.25$ and $5.4^2 = 29.16$. Since 30 is between these, $\sqrt{30} \approx 5.48$, closest to 5.5.
- 24) **Choice A is correct.** (PA.GM.1.1) Point $(1, 2)$ maps to $(4, 2)$, so the translation is right 3 with no vertical shift: $(x, y) \rightarrow (x + 3, y)$.
- 25) **Choice C is correct.** (PA.A.2.4) Co-interior angles sum to 180° : $(m - 15) + (m + 35) = 180 \Rightarrow 2m + 20 = 180 \Rightarrow 2m = 160 \Rightarrow m = 80^\circ$.
- 26) **Choice B is correct.** (PA.GM.2.3) Volume of a pyramid: $V = \frac{1}{3} \cdot B \cdot h = \frac{1}{3} \times (6 \times 6) \times 9 = \frac{1}{3} \times 36 \times 9 = 108 \text{ in}^3$.



Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. This full-length book gave you ten complete Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 8 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Review Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **10** full-length Math practice tests and **2** online tests to help Grade 8 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:

10

Full-Length
Printed Tests

2

Online
Practice Tests



Detailed Answers
& 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



Build Confidence

Practice regularly to feel prepared and test-ready.



Master Key Skills

Develop strong math skills and problem solving abilities.



Improve Understanding

Learn with clear explanations and step-by-step solutions.



Test Strategies

Learn proven strategies to approach every question with confidence.



Boost Performance

Apply your knowledge and achieve your best score!

TOPICS COVERED

- | | |
|---------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Data Analysis |
| ✓ Inequalities | ✓ Measurement |
| ✓ Functions | ✓ Pythagorean Theorem |
| ✓ Geometry | ✓ Surface Area & Volume |
| ✓ Ratios & Proportions | ✓ And More! |



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY