

LOUISIANA LEAP

GRADE 8 MATH

PRACTICE TESTS

5

PRINTED
TESTS



2

 ONLINE
TESTS

**Standards Aligned
Problem Solving For
Comprehensive Assessment Programs**



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



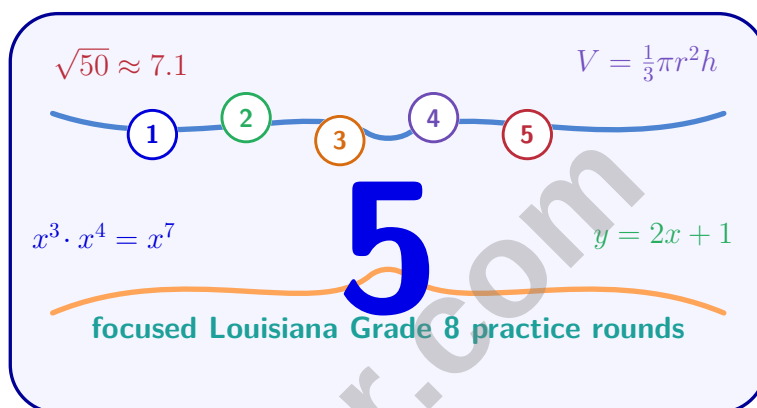
$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 Louisiana LEAP Grade 8 Math Practice Tests

Five LEAP Tests for Equations, Transformations, and Graphs



Five complete 40-question Grade 8 LEAP practice rounds with real numbers, exponents, scientific notation, equations, functions, transformations, geometry, data analysis, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Louisiana Grade 8 Problem Solver!

Five focused rounds for sharper LEAP math thinking

This book gives you five full Grade 8 LEAP math practice tests. Each round is built to help you recognize structure, reason with real numbers and exponents, analyze linear relationships, connect equations with graphs, and explain your thinking with care.

Your Louisiana 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 five-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 an exponent rule, equation, graph, transformation, diagram, 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.

Louisiana 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?

Five LEAP tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
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.



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1) If $x^3 = 125$, what is x ?

☐ A. 4

☐ C. 6

☐ B. 7

☐ D. 5

2) Which table would represent a NONLINEAR function with constant second differences?

x	0	1	2	3
1st diff.	—	1	3	5
2nd diff.	—	—	2	2

☐ A. It is linear because first differences exist

☐ C. It is cubic because second differences are positive

☐ B. It is quadratic because second differences are constant

☐ D. It is exponential because differences vary

3) A table of values for a linear relationship is partially filled:

x	2	5	8
y	3	?	15

What is the missing y -value?

☐ A. 8

☐ C. 10

☐ B. 12

☐ D. 9

4) 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



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- 5) A business profit function is $P(x) = 50x - 200$, where x is the number of units sold. What is the profit when 10 units are sold?

☐ A. \$300☐ C. \$200☐ B. \$250☐ D. \$500

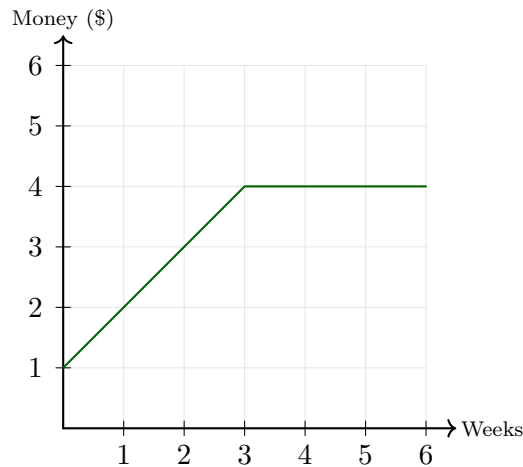
- 6) A store sells items for \$8 each and charges a flat shipping fee of \$12. The total cost C for n items is represented by which function?

☐ A. $C = 8n + 12$ ☐ C. $C = 20n$ ☐ B. $C = 12n + 8$ ☐ D. $C = 8n - 12$

- 7) Solve the system $\begin{cases} x + y = 8 \\ x - y = 2 \end{cases}$ by elimination.

- 8) What two positive integers multiply to 21 and add to 10?





9)

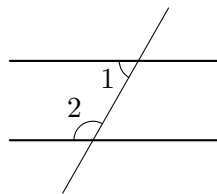
A student saves money over time. The graph shows: increases for 3 weeks, then constant for 3 weeks. The y -intercept is 1. Which is true?

- ☐ A. The student had \$0 at the start ☐ C. The student spends money after week 3
☐ B. The student had \$1 initially and saves \$1 per week, then stops ☐ D. The function is linear over all 6 weeks

10) What is the rule for a translation that moves point (x, y) left 5 units and up 8 units?

- ☐ A. $(x, y) \rightarrow (x + 5, y + 8)$ ☐ C. $(x, y) \rightarrow (x + 5, y - 8)$
☐ B. $(x, y) \rightarrow (x - 5, y + 8)$ ☐ D. $(x, y) \rightarrow (x - 5, y - 8)$

11) Which angle pair is formed when a transversal crosses two parallel lines and both angles are on the same side of the transversal and between the lines?



- ☐ A. Alternate interior angles ☐ C. Co-interior angles
☐ B. Corresponding angles ☐ D. Alternate exterior angles



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- 1) Figure ABCDE is a regular pentagon (all sides equal, all angles equal). It is dilated by a scale factor of 2 to form figure A'B'C'D'E'. How does the dilated pentagon compare to the original?

- ☐ A. The pentagons are congruent ☐ C. The angles are twice as large
☐ B. A'B'C'D'E' has twice the side lengths ☐ D. The pentagons are identical

- 2) What is $\sqrt{400}$?

- ☐ A. 18 ☐ C. 20
☐ B. 19 ☐ D. 21

- 3) $\alpha(x) = -3x + 12$ and β table (0, 12), (2, 6), (4, 0). Related how?

x	0	2	4
$\beta(x)$	12	6	0

- ☐ A. Identical ☐ C. Different slopes.
☐ B. Same slope, different intercepts. ☐ D. Cannot be determined.

- 4) Evaluate 2^{-3} and express it as a decimal.

- 5) Which of the following CORRECTLY pairs an equation with its type?

- ☐ A. $y = x + 2$ is nonlinear ☐ C. $y = \frac{1}{2}x$ is linear
☐ B. $y = x^2 + 2$ is linear ☐ D. $y = \sqrt{x - 1}$ is linear



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6) Which describes a zero slope?

☐ A. A horizontal line

☐ B. A vertical line

☐ C. A diagonal line with positive rate of change

☐ D. A line with undefined slope

7) A farmer's market charges \$2 for apples and \$3 for oranges. On Saturday, the vendor sold 120 pieces of fruit for \$310. How many apples were sold?

☐ A. 40

☐ B. 60

☐ C. 50

☐ D. 80

8) A bus travels according to $d(t) = 55t$, where d is distance in miles and t is time in hours. How far has the bus traveled after 3 hours?

☐ A. 55 miles

☐ B. 110 miles

☐ C. 165 miles

☐ D. 185 miles

9) Solve by substitution:
$$\begin{cases} y = 3x \\ x + y = 12 \end{cases}$$

☐ A. (2, 6)

☐ B. (6, 18)

☐ C. (4, 12)

☐ D. (3, 9)

10) Factor completely: $4x^2 + 16x + 16$.

☐ A. $4(x + 2)^2$

☐ B. $4(x^2 + 4x + 4)$

☐ C. $(2x + 2)^2$

☐ D. $4(x + 4)^2$



- 1) Does the table show values from the equation $y = 5x$?

x	1	2	3
y	5	10	15

- ☐ A. No, should be $y = 5 + x$
- ☐ B. No, should be $y = x + 5$
- ☐ C. Yes, each y -value is 5 times the matching x -value.
- ☐ D. No, missing $x = 0$
- 2) A bank loan of \$10,000 at 5% simple interest is repaid in 5 equal annual installments. The total simple interest over the full term is \$2,500. How much principal and interest remains owed after making the first \$2,500 payment?
- ☐ A. \$8,000
- ☐ B. \$8,500
- ☐ C. \$10,000
- ☐ D. \$9,500
- 3) Solve: $x^7 \cdot x^4 = x^9$.
- ☐ A. 13
- ☐ B. 36
- ☐ C. 5
- ☐ D. $\frac{9}{4}$
- 4) If $x^3 = 512$, what is x ?
- ☐ A. 7
- ☐ B. 10
- ☐ C. 9
- ☐ D. 8
- 5) Find the y -intercept of the line $3x + y = 12$.



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6) Missing value problem: Function through (2, 9) and (5, 24) has what equation?

☐ A. $y = 5x - 1$

☐ C. $y = 3x + 3$

☐ B. $y = 5x + 1$

☐ D. $y = 6x - 3$

7) Which equation represents a NONLINEAR function?

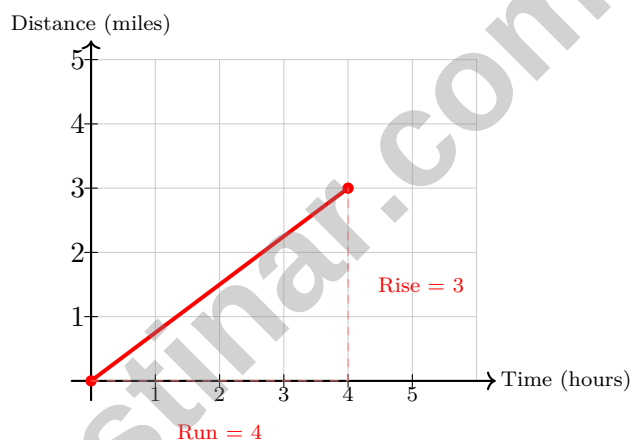
☐ A. $y = 2x + 3$

☐ C. $y = x^2 + 1$

☐ B. $y = -x + 5$

☐ D. $y = \frac{1}{2}x - 7$

8) A car travels at a constant speed. The graph shows its distance from the start over time.



What is the slope (rate of change) of the car's distance?

☐ A. 1 mile per hour

☐ C. $\frac{3}{4}$ miles per hour

☐ B. $\frac{4}{3}$ miles per hour

☐ D. 4 miles per hour



Louisiana LEAP 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 Louisiana LEAP practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (8.EE.A.2) $5 \times 5 \times 5 = 125$, so $\sqrt[3]{125} = 5$.
- 2) **Choice B is correct.** (8.F.A.3) Constant second differences indicate a quadratic (degree-2 polynomial) function, which is nonlinear.
- 3) **Choice D is correct.** (8.EE.B.5) Slope from (2, 3) to (8, 15) is $\frac{15-3}{8-2} = \frac{12}{6} = 2$. At $x = 5$: $y = 3 + 2(5-2) = 3 + 6 = 9$.
- 4) **Choice C is correct.** (8.EE.C.8c) Let $n =$ cups sold. Cost is $400 + 2n$ and revenue is $5n$. Break-even occurs when $5n = 400 + 2n$, so $3n = 400$ and $n = 133\frac{1}{3}$. The shop must sell about 134 cups to cover the cost.
- 5) **Choice A is correct.** (8.F.A.1) Substitute $x = 10$: $P(10) = 50(10) - 200 = 500 - 200 = 300$. Profit is \$300.
- 6) **Choice A is correct.** (8.F.B.4) Cost per item is \$8 (slope), flat shipping is \$12 (intercept). Total: $C = 8n + 12$.
- 7) **The correct answer is (5, 3).** (8.EE.C.8a) Add the two equations to eliminate y : $(x + y) + (x - y) = 8 + 2$, so $2x = 10$, giving $x = 5$. Substitute into the first equation: $5 + y = 8$, so $y = 3$.
- 8) **The correct answer is (3, 7).** (8.EE.C.7) The integers 3 and 7 multiply to 21 and add to 10.
- 9) **Choice B is correct.** (8.F.B.5) The y -intercept (at $x = 0$) is 1, so the student has \$1 initially. From 0 to 3 weeks, the graph rises linearly from 1 to 4, a gain of \$1 per week. From week 3 to 6, the graph is flat at 4, so no additional savings.
- 10) **Choice B is correct.** (8.G.A.3) Left means subtract from x ; up means add to y . The rule is $(x, y) \rightarrow (x - 5, y + 8)$.
- 11) **Choice C is correct.** (8.G.A.5) Co-interior angles (also called same-side interior or consecutive interior angles) are on the same side of the transversal and between the parallel lines.
- 12) **Choice B is correct.** (8.G.B.6, 8.G.B.7) The 7-24-25 triple applies directly: $d^2 = 7^2 + 24^2 = 49 + 576 = 625$, so $d = 25$ cm.
- 13) **Choice B is correct.** (8.G.B.8) $10^2 = 6^2 + b^2$, so $100 = 36 + b^2$, thus $b^2 = 64$ and $b = 8$ units.
- 14) **The correct answer is 1.** (8.F.A.1) A nonvertical line has exactly one y -value for each x -value.
- 15) **Choice B is correct.** (8.G.B.7) Vertical angles are congruent. So $s = 87^\circ$.
- 16) **Choice B is correct.** (8.G.C.9) For a right triangle, base area is $\frac{1}{2} \times 6 \times 8 = 24$ cm² (not 48 cm²). Correct volume: $V = \frac{1}{3} \times 24 \times 10 = 80$ cm³.
- 17) **Choice D is correct.** (8.G.B.7) Rectangle = $18 \times 6 = 108$ cm². Triangle = $\frac{1}{2} \times 6 \times 8 = 24$ cm². Total = $108 + 24 = 132$ cm².
- 18) **Choice C is correct.** (8.G.A.5) A hexagon's interior angles add to 720° . The known angles add to $120 + 100 + 90 + 115 + 130 = 555^\circ$, so the missing angle is $720 - 555 = 165^\circ$.
- 19) **Choice A is correct.** (8.SP.A.1) When both variables increase together, there is a positive correlation. Negative correlation occurs when one increases while the other decreases.
- 20) **The correct answer is A, D.** (8.EE.B.5) Line 1: $k = \frac{6}{4} = 1.5$, so $y = 1.5x$ (\$1.50/lb). Line 2: $k = \frac{12}{6} = 2$, so $y = 2x$ (\$2.00/lb). A is correct (Line 1 equation and price). D is correct (Line 2 has greater slope: $2 > 1.5$). C is wrong (Line 2 is steeper, not Line 1). B is correct but not a correct pair; E is subjective (worse deal, not better). Answer: A and D.
- 21) **Choice C is correct.** (8.SP.A.4) Row-conditional frequency: among HR (row total 120), remote workers are 35. Denominator is the row total, not column or grand total.
- 22) **Choice B is correct.** (8.G.B.8) Absolute deviations: $|3 - 7.5| = 4.5$, $|6 - 7.5| = 1.5$, $|9 - 7.5| = 1.5$, $|12 - 7.5| = 4.5$. Sum = 12. MAD = $12/4 = 3$.
- 23) **Choice A is correct.** (8.G.B.7) $P(\text{not pass}) = 1 - P(\text{pass}) = 1 - \frac{4}{5} = \frac{1}{5}$.
- 24) **The correct answer is 25.** (8.F.A.2) $S_X(w) = 10w$, $S_Y(w) = 50 + 8w$. Equal when $10w = 50 + 8w \Rightarrow w = 25$.
- 25) **Choice B is correct.** (8.EE.C.7b) Card pick (10 choices) times spinner section (4 choices): $10 \times 4 = 40$ possible results.
- 26) **Choice C is correct.** (8.G.A.2) Reflection is a rigid motion that preserves all distances and angles. So the reflected pentagon is congruent to the original.
- 27) **Choice D is correct.** (8.SP.A.2) A negative slope means the line tilts downward from left to right. This represents a negative association: as one variable increases, the other tends to decrease.
- 28) **Choice A is correct.** (8.G.A.4) Perimeter of ABC is $4 + 5 + 6 = 15$ cm. Scale factor is $\frac{45}{15} = 3$. The side corresponding to $BC = 5$ is $EF = 5 \times 3 = 15$ cm.



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Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 5 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 full-length Grade 8 Math** practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!



WHAT'S INSIDE?



Standards-Aligned Practice

Questions designed to cover essential Grade 8 math standards.



Variety of Question Types

Multiple-choice, short answer, and more to build well-rounded skills.



Real-World Applications

Engaging problems that connect math to everyday life.



Step-by-Step Progress

Track improvement and build confidence with every test.

COVERS ALL ESSENTIAL TOPICS

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

5
PRINTED
TESTS



2 ONLINE
TESTS



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