

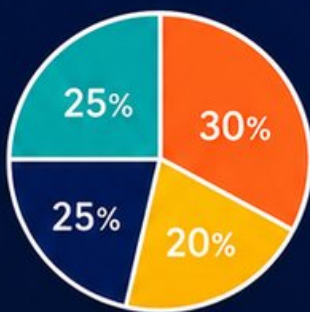
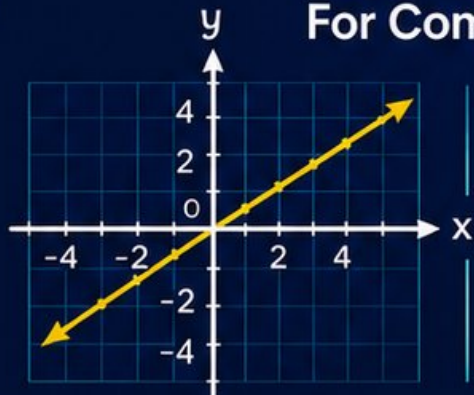
Louisiana LEAP

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

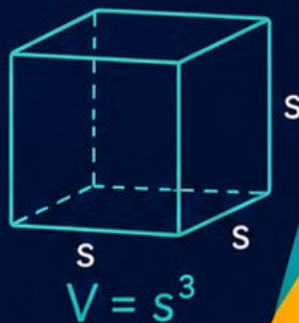


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



4 PRINTED TESTS



2 ONLINE TESTS



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



4 Louisiana LEAP Grade 8 Math Practice Tests

Four Standards-Aligned LEAP Tests with Review and Explanations



Four 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!

Four focused rounds for sharper LEAP math thinking

This book gives you four 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 four-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?

Four LEAP tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	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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& answers

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1) Solve: $\frac{2x}{3} \geq -4$

☐ A. $x \geq -6$

☐ C. $x \geq -12$

☐ B. $x \leq -6$

☐ D. $x \leq -12$

2) A student solves: "A jar has pennies and quarters totaling \$5.00 with 40 coins. How many quarters are there?" The student correctly sets up $p + q = 40$ (coins) and $0.01p + 0.25q = 5.00$ (dollars) and solves to get $q \approx 19.17$. Which statement best describes the issue?

☐ A. The student should have used cents: $p + 25q = 500$ instead.

☐ C. The answer must be a whole number, so the problem statement likely has a typo.

☐ B. The student should use elimination instead of substitution.

☐ D. The system is correct, and 19.17 quarters is a valid final answer.

3) The first differences of a sequence are $-2, -2, -2, -2$. This indicates a:

☐ A. Nonlinear function

☐ C. Exponential function

☐ B. Quadratic function

☐ D. Linear function with negative slope

4) Parallelogram DEFG is rotated 180 degrees about its center to form parallelogram D'E'F'G'. Which statement is NOT true?

☐ A. Side DE equals side D'E'

☐ D. The figure has rotated and is no longer a parallelogram

☐ B. Angle E equals angle E'

☐ C. The perimeters are equal



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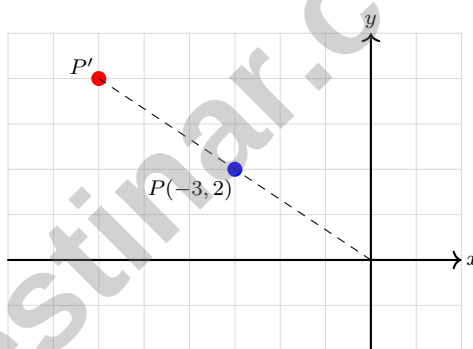
5) Four angles are formed at the intersection of two lines. The sum of three of the angles is 240° . What is the measure of the fourth angle?

☐ A. 60° ☐ C. 120° ☐ B. 80° ☐ D. 240°

6) Which scenario would produce a scatter plot with NO correlation?

☐ A. Number of hours practiced versus sports performance☐ C. Temperature outside versus heating costs☐ B. Shoe size versus favorite color☐ D. Years of education versus average salary

7) Point $P(-3, 2)$ is dilated by scale factor 2 from the origin. What are the coordinates of P' ?

☐ A. $(-6, 4)$ ☐ C. $(6, -4)$ ☐ B. $(-3, 4)$ ☐ D. $(-6, -4)$

8) A function f shows the distance (in miles) from home after t minutes of driving. Which describes what $f(20)$ means?

☐ A. After driving for 20 miles, you are at some time☐ C. The distance from home after 20 minutes of driving☐ B. After 20 minutes of driving, you are 20 miles from home☐ D. It takes 20 minutes to drive some distance

- 9) The elevation rises 500 feet over a horizontal distance of 2000 feet. What is the slope?

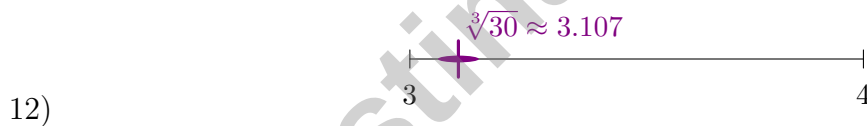
- 10) If x is a whole number and $\sqrt{x}$ is rational, then x must be:

- ☐ A. Irrational ☐ C. A perfect square
☐ B. Odd ☐ D. Greater than 10

- 11) What denominator appears when a repeating decimal has a 4-digit repeating block?

- ☐ A. 10 ☐ C. 999
☐ B. 100 ☐ D. 9999

Cube values: $3^3 = 27$, $4^3 = 64$



Between which two consecutive integers does $\sqrt[3]{30}$ lie?

- ☐ A. 1 and 2 ☐ C. 3 and 4
☐ B. 2 and 3 ☐ D. 4 and 5



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1) The table shows $f(x)$. If $f(x) = 8$, what is x ?

x	1	2	3	4
$f(x)$	4	6	8	10

☐ A. 1

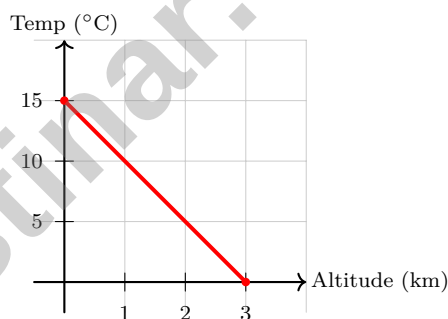
☐ C. 3

☐ B. 2

☐ D. 4

2) What is $\sqrt{484}$?

3) A graph shows temperature (in $^{\circ}\text{C}$) versus altitude (in km). The line passes through $(0, 15)$ and $(3, 0)$.



What is the slope?

☐ A. -5°C per km

☐ C. $-\frac{1}{5}^{\circ}\text{C}$ per km

☐ B. 5°C per km

☐ D. 3°C per km



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- 4) A slower cyclist riding 12 mph has a 9-mile head start. A faster cyclist riding 15 mph starts from the same point and rides in the same direction. How long will it take the faster cyclist to catch up?

☐ A. 2 hours
☐ B. 2.5 hours
☐ C. 3 hours
☐ D. 4 hours

- 5) If the MAD of a data set is 0, and you add a new value equal to the current mean, what happens to the MAD?

☐ A. MAD becomes positive
☐ B. MAD stays 0
☐ C. MAD doubles
☐ D. Cannot determine without knowing the data

- 6) A path forms a rectangular frame: outer 25 m by 15 m, inner 20 m by 10 m. What is the area of the path only, in m^2 ?



- 7) A student has a 0.8 probability of passing math and 0.7 probability of passing English. If these are independent, what is the probability of passing both?

☐ A. 0.56
☐ B. 1.5
☐ C. 0.75
☐ D. 0.80



1) Two lines intersect and form four angles. If one angle measures 72° , what are the measures of the other three angles?

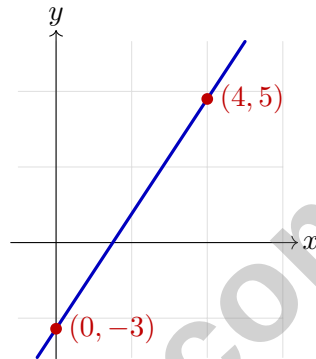
☐ A. $72^\circ, 72^\circ, 72^\circ$

☐ C. $108^\circ, 108^\circ, 108^\circ$

☐ B. $72^\circ, 108^\circ, 108^\circ$

☐ D. $90^\circ, 90^\circ, 90^\circ$

2) The graph shows a line through $(0, -3)$ and $(4, 5)$. Find the slope of the line.



3) If $x^2 = 144$, what is the positive value of x ?

☐ A. 11

☐ C. 13

☐ B. 14

☐ D. 12

4) Which of the following equations represents a LINEAR function?

☐ A. $y = x^3 - 2$

☐ C. $y = \frac{1}{x} + 1$

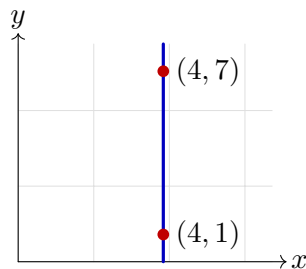
☐ B. $y = \sqrt{x}$

☐ D. $y = 5 - 4x$

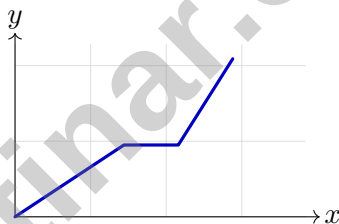


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- 5) A graph shows a line with an undefined slope passing through $(4, 1)$ and $(4, 7)$. Which description fits?



- ☐ A. The line is horizontal
- ☐ B. The line is slanted at 45°
- ☐ C. The line has zero slope
- ☐ D. The line is vertical
- 6) Sketch or describe a graph showing: a person walks for 2 hours (increasing distance), rests for 1 hour (no change in distance), then runs for 1 hour (distance increases again, faster). What geometric shapes make up this graph?



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 A is correct.** (8.EE.C.8b) Multiply by $\frac{3}{2}$: $x \geq -6$.
- 2) **Choice C is correct.** (8.EE.C.8c) Setting up correctly: $p + q = 40$ and $0.01p + 0.25q = 5.00$. From the first: $p = 40 - q$. Substituting: $0.01(40 - q) + 0.25q = 5.00$, so $0.40 - 0.01q + 0.25q = 5.00$, giving $0.24q = 4.60$ and $q \approx 19.17$. Since the number of coins must be an integer, the problem's numbers are inconsistent.
- 3) **Choice D is correct.** (8.F.A.3) Constant first differences (whether positive or negative) indicate a linear function. The negative value indicates the function is decreasing.
- 4) **Choice D is correct.** (8.G.A.2) Rotation preserves shape and size (rigid motion), so $D'E'F'G'$ is congruent to $DEFG$ and remains a parallelogram. Statements A, B, and C are all true.
- 5) **Choice C is correct.** (8.G.B.7) All four angles at an intersection sum to 360° . The fourth angle is $360 - 240 = 120^\circ$.
- 6) **Choice B is correct.** (8.SP.A.2) Shoe size and favorite color have no clear logical or numerical relationship, so we would expect no meaningful correlation.
- 7) **Choice A is correct.** (8.G.A.4) Multiply both coordinates by 2: $(-3 \times 2, 2 \times 2) = (-6, 4)$.
- 8) **Choice C is correct.** (8.F.A.1) In function notation $f(20)$, the input is $t = 20$ minutes and the output is the distance. So $f(20)$ means the distance from home after 20 minutes of driving.
- 9) **The correct answer is $\frac{1}{4}$.** (8.EE.B.5) Slope = $\frac{500}{2000} = \frac{1}{4} = 0.25$.
- 10) **Choice C is correct.** (8.NS.A.1) For whole numbers, a rational square root means the square root is actually a whole number. That happens only for perfect squares such as 1, 4, 9, 16, and 25.
- 11) **Choice D is correct.** (8.NS.A.1) For a pure repeating decimal with block length n , the denominator is $\underbrace{99 \dots 9}_n$. A 4-digit block uses 9999.
- 12) **Choice C is correct.** (8.NS.A.2) $3^3 = 27$ and $4^3 = 64$. Since $27 < 30 < 64$, we have $3 < \sqrt[3]{30} < 4$.
- 13) **Choice D is correct.** (8.NS.A.2) $\sqrt{3} \approx 1.73$, so $\sqrt{3} + 1 \approx 2.73$, which falls between 2 and 3. Distractors A, C, and D represent underestimation, overestimation, and far overestimation of $\sqrt{3}$.
- 14) **Choice D is correct.** (8.EE.A.3) Move the decimal 2 places left to get 9.5; the exponent is 2.
- 15) **Choice A is correct.** (8.G.C.9) Prism A: $SA = 2(60 + 20 + 12) = 184 \text{ cm}^2$. Prism B: $SA = 2(40 + 24 + 15) = 158 \text{ cm}^2$. Prism A has the greater surface area.
- 16) **Choice B is correct.** (8.G.A.1) Two reflections across perpendicular lines (axes) equals a 180° rotation about their intersection (the origin).
- 17) **The correct answer is 2.5.** (8.G.B.8) Absolute deviations: $|3 - 7.5| = 4.5$, $|7 - 7.5| = 0.5$, $|9 - 7.5| = 1.5$, $|11 - 7.5| = 3.5$. Sum = 10. MAD = $10/4 = 2.5$.
- 18) **Choice D is correct.** (8.EE.B.6) In the context of a linear equation, the slope represents the rate of change. Here, the fare increases by \$2 for each additional mile.
- 19) **Choice C is correct.** (8.EE.C.7) Distribute: $8x - 4 = 3x + 9$. Subtract $3x$ from both sides and add 4 to both sides to get $5x = 13$, so $x = \frac{13}{5}$.
- 20) **Choice B is correct.** (8.G.C.9) $V_{\text{cone}} = \frac{1}{3}V_{\text{cyl}} = \frac{1}{3} \times 900 = 300 \text{ cm}^3$. Difference: $900 - 300 = 600 \text{ cm}^3$. ✓
- 21) **The correct answer is A,B.** (8.EE.A.2) $81 = 9^2$ and $100 = 10^2$, so both are perfect squares. The other choices are not perfect squares or perfect cubes.
- 22) **Choice B is correct.** (8.SP.A.3) The line passes through approximately (0, 45) and (5, 78), so slope $\approx \frac{33}{5} = 6.6$. At $x = 2.5$: $y \approx 45 + 6.6(2.5) \approx 61.5$.
- 23) **Choice D is correct.** (8.G.B.7) Net income = Gross income - Deductions = $\$1,200 - \$240 = \$960$.
- 24) **Choice D is correct.** (8.EE.A.1) After $3^2 = 9$ hours, doubling 9 times means multiply by 2^9 . Total: $10^2 \cdot 2^9$.
- 25) **Choice C is correct.** (8.EE.A.4) Multiply coefficients: $4.5 \times 2 = 9$. Add exponents: $10^{-6+(-4)} = 10^{-10}$. Result: 9×10^{-10} .
- 26) **Choice C is correct.** (8.EE.B.5) Proportional relationship: $y = 3x$. For $x = 12$: $y = 3(12) = 36$ gallons.



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Hi, Math Communicator!

◇ Grade 8 math is not only about getting a number. It is about explaining relationships and making your reasoning visible. ◇

★ **Remember this:** When you show steps, label diagrams, and write clear answers, you are joining the conversation that math is trying to have. You practiced across 4 full Grade 8 practice tests, and that repeated effort matters. ★

Communication Skills

- **Use Words:** Explain what the answer means.
- **Use Symbols:** Keep equations accurate.
- **Use Diagrams:** Show relationships visually.
- **Use Units:** Connect math to context.

Grade 8 test-day tip: For open-ended questions, answer in a complete thought: value, unit, and reason.

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

Jay Daie

Your Math Communication Coach

PRACTICE TODAY, ACHIEVE TOMORROW!

Give your child the confidence and skills they need with **4 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!

4



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



4 PRINTED TESTS

+



2 ONLINE TESTS



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