

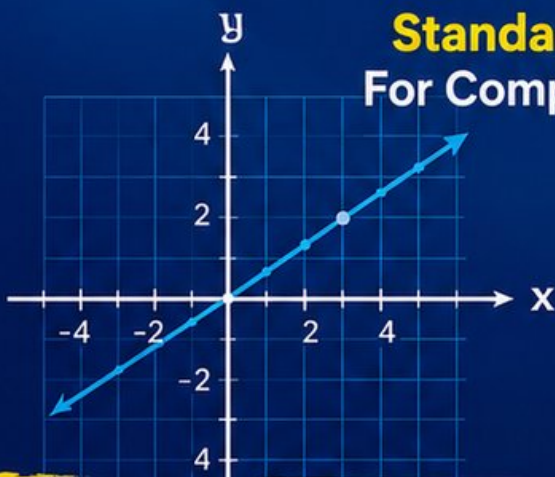
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Louisiana
LEAP

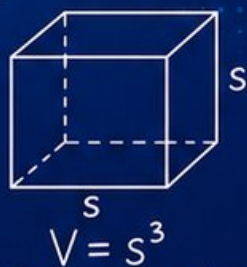
Grade 8

MATH

PRACTICE TESTS

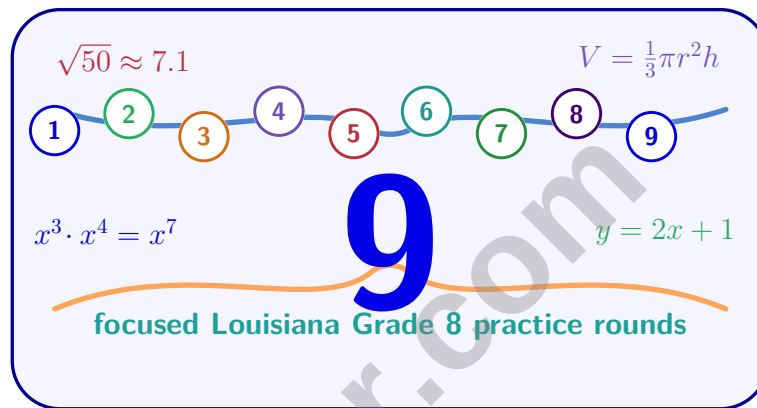
Standards Aligned Problem Solving
For Comprehensive Assessment Programs

$$2x + 3y = 12$$
$$y = mx + b$$

9 PRINTED
TESTS2 ONLINE
TESTSUse these **two additional online practice tests** for extra review after the printed tests in this book.

9 Louisiana LEAP Grade 8 Math Practice Tests

Louisiana Grade 8 Math Practice for Equations, Graphs, Geometry, and Data Skills



Nine 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!

Nine focused rounds for sharper LEAP math thinking

This book gives you nine 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 nine-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?

Nine LEAP tests, 360 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real and irrational numbers, integer exponents, scientific notation, equations, and careful reading.
Tests 4–6	Slope, systems of equations, functions, inequalities, transformations, congruence, and similarity.
Tests 7–9	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
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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Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	31
★ Practice Test 3	_____	46
★ Practice Test 4	_____	63
★ Practice Test 5	_____	78
★ Practice Test 6	_____	93
★ Practice Test 7	_____	111
★ Practice Test 8	_____	126
★ Practice Test 9	_____	142
Practice Test Answer Keys	_____	157
Practice Test Answers and Explanations	_____	163

- 1) A decorative shape consists of a cube with side 5 cm topped with a square pyramid (same base, height 5 cm). Which choice is closest to the total volume?

☐ A. 125 cm^3

☐ C. 208 cm^3

☐ B. 166 cm^3

☐ D. 250 cm^3

- 2) Which line is perpendicular to $y = \frac{1}{2}x - 3$?

☐ A. $y = \frac{1}{2}x + 4$

☐ C. $y = -2x + 5$

☐ B. $y = 2x + 1$

☐ D. $y = -\frac{1}{2}x - 2$

- 3) A hexagon is translated by the vector $(3, -2)$ and then rotated 90° counterclockwise about the origin. How many sides does the resulting figure have?

☐ A. 3

☐ C. 12

☐ B. 9

☐ D. 6

- 4) Which is the best estimate of $\sqrt{45}$?

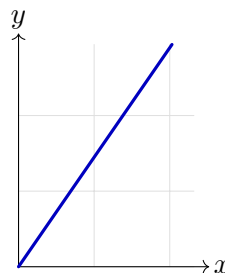
☐ A. 5.5

☐ C. 6.7

☐ B. 6.0

☐ D. 9.0

- 5) Which point must be on the graph of $y = 2x$?



☐ A. $(1, 2)$

☐ C. $(2, 1)$

☐ B. $(1, 3)$

☐ D. $(0, 2)$



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6) If an equation simplifies to $0 = 5$ after subtracting variables and constants from both sides, what does this tell you?

- ☐ A. The equation has exactly one solution
- ☐ B. The solution is $x = 0$
- ☐ C. The equation has infinitely many solutions
- ☐ D. The equation has no solution

7) Which ordered pair satisfies both equations?

- $2x - y = 5$
- $x + 2y = 5$

- ☐ A. (3, 1)
- ☐ B. (2, 0)
- ☐ C. (1, -3)
- ☐ D. (4, 3)

8) Which is the solution to $2(x - 1) \geq 4$?

- ☐ A. $x \geq 3$
- ☐ B. $x \leq 3$
- ☐ C. $x \geq 1$
- ☐ D. $x \leq 1$

9) A student expands $(x + 2)(x + 3)$ and writes $x^2 + 5x + 6$. Is this correct?

- ☐ A. Yes, it is correct.
- ☐ B. No; the constant term is wrong.
- ☐ C. No; the middle term is wrong.
- ☐ D. No; all terms are wrong.

10) For a dashed boundary line, the inequality must use which symbol(s)?

- ☐ A. $\leq$ only
- ☐ B. $\geq$ only
- ☐ C. $<$ or $>$
- ☐ D. $\leq$ or $\geq$



11) Function through (1, 4) and (3, 8). Slope is?

☐ A. 1

☐ C. 3

☐ B. 2

☐ D. 4

12) A plant grows such that its height is modeled by $h = 2t + 15$, where h is height in cm and t is time in weeks. Interpret the meaning of the number 2 in this equation.

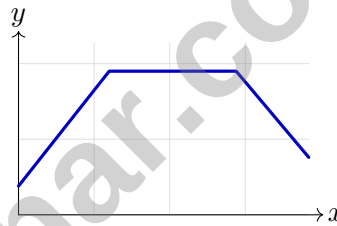
☐ A. The plant starts at a height of 2 cm.

☐ C. The plant reaches a height of 2 cm.

☐ B. The plant grows 2 cm per week.

☐ D. The plant grows for 2 weeks total.

13) A runner's speed increases for the first 5 minutes, stays constant for 10 minutes, then decreases as they cool down. Which graph shape represents this?


☐ A. Three straight segments: rising, flat, falling

☐ C. A U-shaped parabola

☐ D. A line with constant positive slope

☐ B. A curve that rises steeply, then flat, then falls

14) In triangle XYZ , angle $X = (n + 15)^\circ$, angle $Y = (n + 20)^\circ$, and angle $Z = (2n + 25)^\circ$. What is the value of n ?

☐ A. 25

☐ C. 35

☐ B. 30

☐ D. 40


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1) Solve for x : $5(x - 2) = 3(x + 2)$

☐ A. $x = 8$

☐ C. $x = 1$

☐ B. $x = -8$

☐ D. $x = 10$

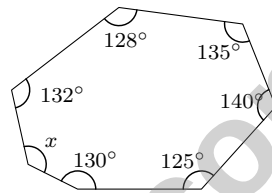
2) Two angles are supplementary. One angle measures 5 times the other. What is the measure of the larger angle?

☐ A. 30°

☐ C. 90°

☐ B. 36°

☐ D. 150°



3)

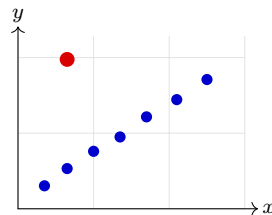
A heptagon has six interior angles: 130° , 125° , 140° , 135° , 128° , 132° . Find the seventh angle.

☐ A. 100°

☐ C. 110°

☐ B. 105°

☐ D. 115°



4)

A scatter plot shows years of education versus annual income for 100 adults. Most points cluster in an upward trend, but three points are far below the trend line, representing people with high education but low income. These three points are:

☐ A. Errors that should be removed

☐ C. Examples of no correlation

☐ B. Part of the overall trend

☐ D. Outliers deserving investigation


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- 5) A team has 10 players. The coach assigns a captain, a co-captain, and a goalkeeper. How many different leadership combinations are possible?

☐ A. $10 + 9 + 8 = 27$

☐ C. $\binom{10}{3} = 120$

☐ B. $10 \times 9 \times 8 = 720$

☐ D. $10^3 = 1,000$

- 6) A two-way table categorizes 150 households by income level and internet access:

	Has Internet	No Internet	Total
Low Income	40	50	90
High Income	55	5	60
Total	95	55	150

Among high-income households, what is the relative frequency of those without internet, as a decimal?

☐ A. 0.033

☐ C. 0.367

☐ B. 0.083

☐ D. 0.917

- 7) A student finds that their homework scores have a mean of 85 and MAD of 4. Which interval is one MAD from the mean?

☐ A. 81 to 89

☐ C. 80 to 90

☐ B. 75 to 95

☐ D. 70 to 100

- 8) When rolling two dice, what is the probability of rolling a sum of 10 or higher?

☐ A. $\frac{1}{12}$

☐ C. $\frac{6}{36}$

☐ B. $\frac{5}{36}$

☐ D. $\frac{7}{36}$



1) Which data set has a MAD of 2?

☐ A. {1, 2, 3, 4, 5}

☐ B. {2, 4, 6, 10}

☐ C. {5, 7, 9, 11}

☐ D. {1, 3, 5, 9}

2) A triangular prism has a right triangular base with legs 3 cm and 4 cm, and hypotenuse 5 cm. The height (length) of the prism is 7 cm. What is the total surface area?

☐ A. 12 cm^2

☐ B. 60 cm^2

☐ C. 72 cm^2

☐ D. 96 cm^2

3) A company requires workers to complete at least 100 units per day. If a worker has completed 45 units, how many more units must the worker complete?

4) A rental agency charges $C = 0.35m + 50$, where C is cost in dollars and m is miles. Which statement BEST explains the practical meaning of 0.35?

☐ A. The company charges \$0.35 per mile driven

☐ B. The company charges a \$50 deposit that covers 0.35 miles

☐ C. For every 0.35 miles, the cost increases by \$1

☐ D. The daily rental rate is \$0.35

5) Function with slope 2 and y -intercept -5 is?

☐ A. $y = 2x - 5$

☐ B. $y = -5x + 2$

☐ C. $y = 2x + 5$

☐ D. $y = -2x - 5$



6) An electrician charges \$50 for a service call and \$35 per hour. A customer's bill comes to \$225. How many hours did the electrician work?

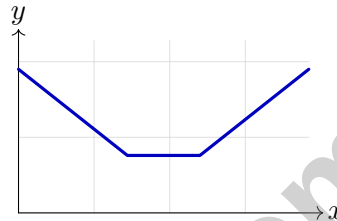
☐ A. 4 hours

☐ C. 6 hours

☐ B. 5 hours

☐ D. 7 hours

7) An elevator moves: down for 10 seconds, stops for 5 seconds, up for 8 seconds. Sketch the height-vs.-time graph. Which shape describes it?



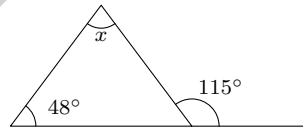
☐ A. Three straight segments: decreasing, flat, increasing

☐ C. One increasing line across all time

☐ B. One decreasing line across all time

☐ D. A parabola opening upward

8) In the diagram below, the exterior angle of a triangle measures 115° . If one remote interior angle is 48° , what is the other remote interior angle?



☐ A. 50°

☐ C. 67°

☐ B. 60°

☐ D. 115°



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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 B is correct.** (8.G.C.9) Cube: $V_c = 5^3 = 125 \text{ cm}^3$. Pyramid: $V_{py} = \frac{1}{3} \times 25 \times 5 = \frac{125}{3} \approx 41.67 \text{ cm}^3$. Total: $125 + 41.67 \approx 166.67 \text{ cm}^3$, so 166 cm^3 is the closest choice.
- 2) **Choice C is correct.** (8.EE.B.6) The given line has slope $\frac{1}{2}$. A perpendicular line has slope -2 (negative reciprocal).
- 3) **Choice D is correct.** (8.G.A.1) Both translation and rotation are rigid transformations that preserve the shape. The figure remains a hexagon with 6 sides.
- 4) **Choice C is correct.** (8.NS.A.2) $\sqrt{45} = 3\sqrt{5} \approx 3 \times 2.24 = 6.71$.
- 5) **Choice A is correct.** (8.EE.B.5) For $y = 2x$: at $x = 1$, $y = 2(1) = 2$. Only choice A gives the correct point.
- 6) **Choice D is correct.** (8.EE.C.7) A false statement like $0 = 5$ means no value of the variable satisfies the equation.
- 7) **Choice A is correct.** (8.EE.C.8a) Check $(3, 1)$: $2(3) - 1 = 5$ ✓ and $3 + 2(1) = 5$ ✓. Both equations are satisfied.
- 8) **Choice A is correct.** (8.EE.C.8b) Distribute: $2x - 2 \geq 4$. Add 2: $2x \geq 6$. Divide by 2: $x \geq 3$.
- 9) **Choice A is correct.** (8.EE.C.7) FOIL: $(x + 2)(x + 3) = x^2 + 3x + 2x + 6 = x^2 + 5x + 6$. The student correctly applied FOIL.
- 10) **Choice C is correct.** (8.EE.C.8b) Dashed lines correspond to STRICT inequalities ($<$ and $>$), which do not include the boundary. The symbols $\leq$ and $\geq$ use solid lines.
- 11) **Choice B is correct.** (8.F.A.2) Slope $= (8 - 4)/(3 - 1) = 4/2 = 2$.
- 12) **Choice B is correct.** (8.F.B.4) In $h = mt + b$, the slope $m = 2$ represents the rate of change: 2 cm per week. The number 15 is the initial height (intercept).
- 13) **Choice A is correct.** (8.F.B.5) The scenario describes three distinct behaviors: rising speed (increasing), constant speed (flat), and decreasing speed (falling). This is a piecewise linear graph with three segments.
- 14) **Choice B is correct.** (8.G.A.5) The angles sum to 180° : $(n + 15) + (n + 20) + (2n + 25) = 180$. Thus $4n + 60 = 180$, so $4n = 120$ and $n = 30$.
- 15) **Choice B is correct.** (8.G.B.6, 8.G.B.7) The diagonal is $d = \sqrt{70^2 + 24^2} = \sqrt{5476} = 74 \text{ m}$. Walking along the length and width is $70 + 24 = 94 \text{ m}$, so the diagonal is $94 - 74 = 20 \text{ m}$ shorter.
- 16) **Choice C is correct.** (8.G.B.7) Expected repair cost $= 0.1 \times 300 = \$30$. Since the warranty costs \$89, it costs more than the expected repair cost.
- 17) **Choice D is correct.** (8.EE.A.1) First apply quotient rule: $\frac{m^8}{m^5} = m^3$. Then multiply: $m^3 \cdot m^2 = m^{3+2} = m^5$.
- 18) **Choice C is correct.** (8.EE.A.2) $18 \times 18 = 324$, so $\sqrt{324} = 18$.
- 19) **The correct answer is A, E.** (8.G.C.9) A is true because $V = 3.14(4^2)(10) = 502.4 \text{ cm}^3$. E is true because a cone's volume is one-third the volume of a cylinder with the same base and height. B is false because the sphere's volume is about 267.95 cm^3 , not the cylinder volume. C is false because the cone's volume with height 10 cm is about 167.47 cm^3 . D is false because a cylinder with height 6 cm has volume 301.44 cm^3 , which is greater than the sphere volume.
- 20) **Choice C is correct.** (8.EE.A.4) Correct rule: multiply coefficients and add exponents. The student got $2 \times 4 = 8$ correct, but mistakenly multiplied $3 \times 4 = 12$ instead of adding $3 + 4 = 7$.
- 21) **Choice B is correct.** (8.F.A.1) The vertical line test states that a graph is a function if no vertical line intersects it more than once. Options A and D are vertical lines, so they fail. Option C is a circle and fails at multiple points. Option B, a parabola, is a function.
- 22) **Choice C is correct.** (8.F.A.3) $y = \frac{1}{x^2}$ is a reciprocal function with x in the denominator, making it nonlinear. All others are linear.
- 23) **The correct answer is 0.00047.** (8.EE.A.3) Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 24) **Choice C is correct.** (8.G.A.2) Rotation is a rigid motion, so it preserves all distances and angles. The rotated figure is congruent to the original.
- 25) **Choice D is correct.** (8.G.A.3) Original length: $\sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$. Dilated: $15 \times \frac{2}{3} = 10$.
- 26) **Choice A is correct.** (8.G.B.8) $d = \sqrt{(5 - 2)^2 + (7 - 3)^2} = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$ units.
- 27) **Choice C is correct.** (8.G.B.7) Trapezoid area $= \frac{1}{2}(6 + 10) \times 5 = 40 \text{ cm}^2$. Rectangle area $= 10 \times 3 = 30 \text{ cm}^2$. Total $= 40 + 30 = 70 \text{ cm}^2$.



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You Know More Than You Think

Hi, Skilled Learner!

◇ After working through Grade 8 practice, you now have more tools than you may realize: models, formulas, graphs, equations, and reasoning habits. ◇

★ **Remember this:** The next step is learning when to use each tool. That comes from practice, review, and the courage to try a method even when you are unsure. This version gave you 9 opportunities to rehearse test-day habits. ★

Tools You Can Use

- **Models:** Make relationships visible.
- **Equations:** Represent unknowns clearly.
- **Graphs:** Show change and location.
- **Formulas:** Organize measurement problems.

Grade 8 test-day tip: Before solving, name the tool you plan to use. That small choice makes your work more intentional.

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

Jay Daie

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GRADE

8

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- | | |
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