

8

Louisiana

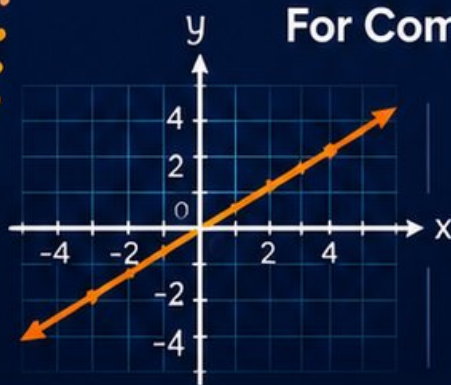
LEAP

GRADE 8

MATH

PRACTICE TESTS

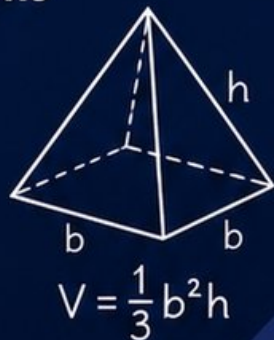
Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$A = \pi r^2$$

$$C = 2\pi r$$

$$V = \frac{1}{3}\pi r^2 h$$



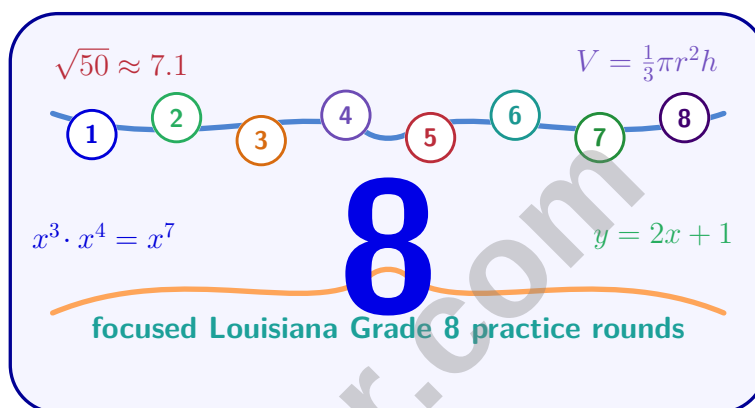
$$V = \frac{1}{3}b^2 h$$

**8** PRINTED TESTS**2** ONLINE TESTS

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

8 Louisiana LEAP Grade 8 Math Practice Tests

Louisiana Grade 8 Practice for Functions, Geometry, and Data Skills



Eight 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!

Eight focused rounds for sharper LEAP math thinking

This book gives you eight 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

An eight-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?

Eight LEAP tests, 320 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 7–8	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
Answer Pages	Compact keys and explanations that show why each answer works.

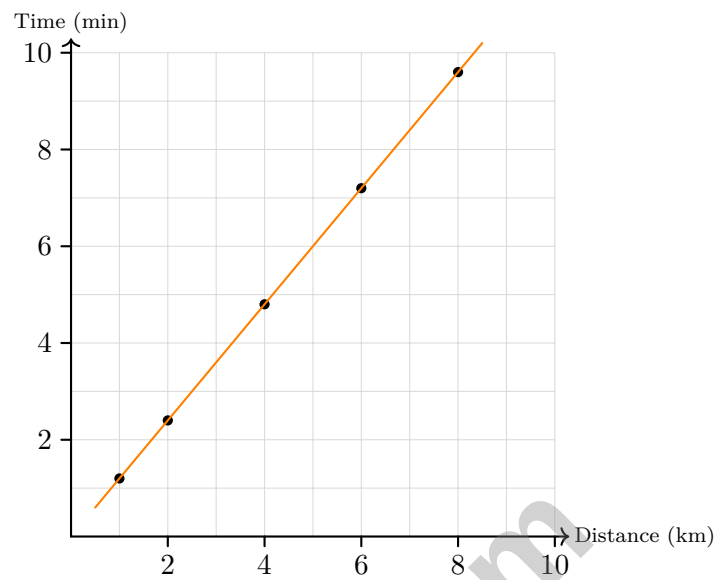
The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



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1)

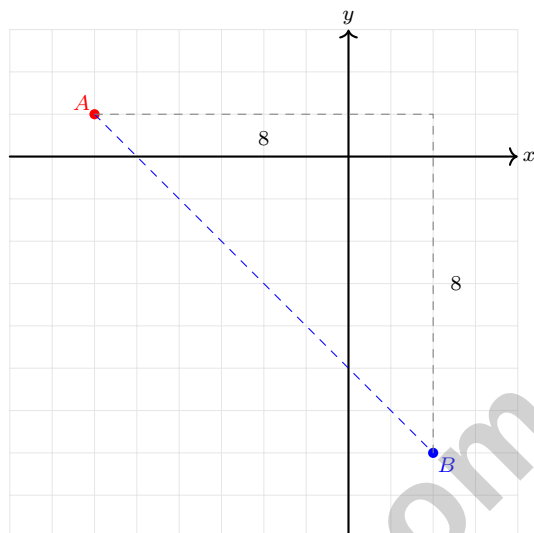
A delivery company tracks distance versus delivery time. The trend line shows an almost perfect fit with points nearly aligned. What can you conclude?

- | | |
|---|--|
| ☐ A. Distance and time are unrelated | ☐ C. The trend line should not be trusted |
| ☐ B. There is a strong linear relationship with very small residuals | ☐ D. The data contains measurement errors |



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- 2) On a map, two landmarks are at $(-6, 1)$ and $(2, -7)$. What is the distance between them?



- ☐ A. $8\sqrt{2}$ units ☐ C. $\sqrt{130}$ units
☐ B. 16 units ☐ D. 10 units
- 3) If two supplementary angles are equal, what is the measure of each angle?
- ☐ A. 45° ☐ C. 180°
☐ B. 90° ☐ D. 360°
- 4) The Great Pyramid of Giza has an approximate square base with side 230 m and height 147 m. Estimate its volume using $V = \frac{1}{3} \times B \times h$.
- ☐ A. $1.5 \times 10^6 \text{ m}^3$ ☐ C. $3.8 \times 10^6 \text{ m}^3$
☐ B. $2.6 \times 10^6 \text{ m}^3$ ☐ D. $7.7 \times 10^6 \text{ m}^3$



5) A two-way table tracks 340 customers and purchase behavior:

	Online	In-Store	Total
Loyalty Member	136	119	255
Non-Member	57	28	85
Total	193	147	340

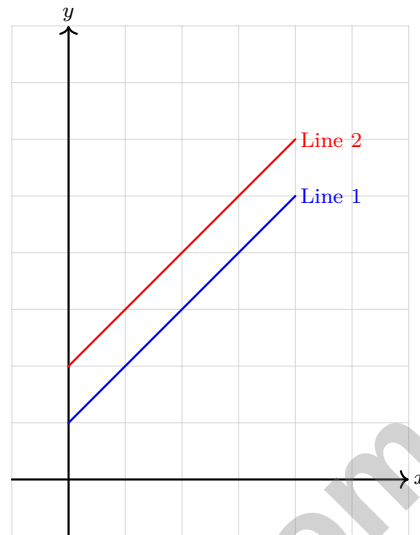
What percentage of online purchases are from non-members?

- ☐ A. $\approx 17\%$
☐ C. $\approx 30\%$
- ☐ B. $\approx 25\%$
☐ D. $\approx 33\%$
- 6) Which scenario would most likely result in a smaller MAD after removing an outlier?
- ☐ A. The outlier equals the mean
 ☐ C. The outlier is far from the mean
- ☐ B. The outlier is the only value
 ☐ D. The data set has one value
- 7) A card is drawn from a standard deck. What is the probability that it is either a 5 or a 9?
- ☐ A. $\frac{5}{52}$
☐ C. $\frac{4}{52}$
- ☐ B. $\frac{8}{52}$
☐ D. $\frac{9}{52}$
- 8) Which is a counterexample to the claim “All decimals that contain a 3 are irrational”?
- ☐ A. $\sqrt{3}$
☐ C. $\pi \approx 3.14159\dots$
- ☐ B. 0.3 (terminating)
 ☐ D. 0.3030030003... (non-repeating)



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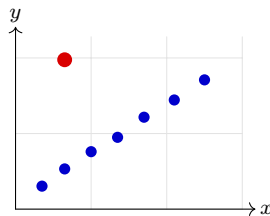
1) Two lines are shown on the same graph. Which statement is true?



- ☐ A. Line 1 has a steeper slope
☐ B. Line 2 has a steeper slope
☐ C. Both lines have the same slope
☐ D. Line 1 is horizontal
- 2) Which relation is NOT a function?
- ☐ A. $\{(3, 1), (3, 2), (4, 1)\}$
☐ B. $\{(1, 5), (2, 6), (3, 7)\}$
☐ C. $\{(0, 0), (1, 1), (2, 2)\}$
☐ D. $\{(2, 8), (3, 8), (4, 8)\}$
- 3) A dilation with center at the origin and scale factor $\frac{1}{2}$ is applied to point $B(8, -6)$. What are the coordinates of B' ?
- ☐ A. $(4, -3)$
☐ B. $(16, -12)$
☐ C. $(8, -3)$
☐ D. $(4, -6)$



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4)

A scatter plot shows the time spent studying versus quiz grade. One point is far below the trend line, which could indicate:

- ☐ A. The trend line is incorrect ☐ C. Studying does not affect quiz grades
☐ B. That student may have been unprepared despite studying, or the data was recorded incorrectly ☐ D. The student did not study enough

5) A cylinder has radius 1.5 inches and height 8 inches. What is the surface area? (Use $\pi \approx 3.14$.)

- ☐ A. 28.3 in^2 ☐ C. 75.4 in^2
☐ B. 47.1 in^2 ☐ D. 89.5 in^2



1) Factor $4x + 12$ completely.

☐ A. $4(x + 3)$

☐ C. $12(x + 1)$

☐ B. $2(2x + 6)$

☐ D. $x + 12$

2) A line segment has endpoints at $(1, 2)$ and $(5, 6)$. After a translation, the endpoints become $(3, 5)$ and $(7, 9)$. What is the translation vector?

☐ A. $(2, 3)$

☐ C. $(4, 4)$

☐ B. $(-2, -3)$

☐ D. $(1, 2)$

3) Solve by substitution:
$$\begin{cases} x = y - 4 \\ 2x + 3y = 2 \end{cases}$$

☐ A. $(2, 6)$

☐ C. $(1, 5)$

☐ B. $(0, 4)$

☐ D. $(-2, 2)$

4) A temperature increases by 3° per hour. If it starts at 12°C and must stay below 30°C , which inequality represents valid times (in hours)?

☐ A. $t < 6$

☐ C. $t \leq 6$

☐ B. $t > 6$

☐ D. $t \geq 6$

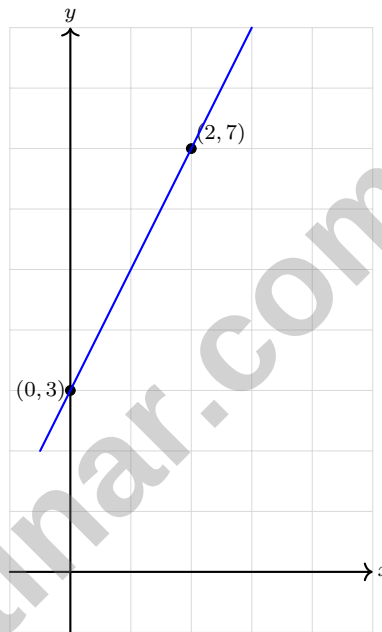
5) For $-x + 2y > 4$, after rewriting to slope-intercept form $y > \frac{1}{2}x + 2$, which description matches the graph?

☐ A. Dashed line, shade above☐ C. Solid line, shade above☐ B. Dashed line, shade below☐ D. Solid line, shade below

6) Distance traveled: Function $d_1(t) = 55t$ miles (constant speed). Function d_2 at hours $(0, 0)$, $(3, 180)$. After 6 hours, which distance greater?

☐ A. d_1 ☐ C. Same distance☐ B. d_2 ☐ D. Cannot determine

7) The graph shows a linear function passing through points $(0, 3)$ and $(2, 7)$.



What is the slope of the line?

☐ A. 2☐ C. $\frac{1}{2}$ ☐ B. 3☐ D. $\frac{2}{7}$ 

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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.SP.A.2) Points nearly aligned on the line indicates high correlation, small residuals, and a strong linear model.
- 2) **Choice A is correct.** (8.G.B.8) $d = \sqrt{(2 - (-6))^2 + (-7 - 1)^2} = \sqrt{8^2 + (-8)^2} = \sqrt{64 + 64} = \sqrt{128} = 8\sqrt{2}$ units.
- 3) **Choice B is correct.** (8.G.B.7) If the angles are equal and supplementary, then $x + x = 180$, so $2x = 180$ and $x = 90^\circ$.
- 4) **Choice B is correct.** (8.G.C.9) $B = 230^2 = 52900 \text{ m}^2$. $V = \frac{1}{3} \times 52900 \times 147 \approx \frac{7776300}{3} \approx 2.6 \times 10^6 \text{ m}^3$.
- 5) **Choice C is correct.** (8.SP.A.4) Column-conditional frequency among online purchases: $\frac{57}{193} \approx 0.30 \approx 30\%$.
- 6) **Choice C is correct.** (8.G.B.8) Removing an outlier far from the mean removes a large deviation, lowering the overall average deviation (MAD).
- 7) **Choice B is correct.** (8.G.B.7) These are mutually exclusive. $P(5 \text{ or } 9) = P(5) + P(9) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52}$.
- 8) **Choice B is correct.** (8.NS.A.1) A counterexample must contain a 3 and still be rational. The decimal $0.3 = \frac{3}{10}$ does exactly that, so it disproves the claim. Choices A and C are irrational, and choice D is non-terminating and non-repeating, so it is also irrational.
- 9) **Choice C is correct.** (8.NS.A.1) A 3-digit repeating block always produces a denominator of $999 = 10^3 - 1$.
- 10) **Choice D is correct.** (8.NS.A.2) Since $1^2 = 1$ and $2^2 = 4$, and $1 < 2 < 4$, we have $1 < \sqrt{2} < 2$.
- 11) **Choice D is correct.** (8.EE.A.3) Move the decimal 6 places to the right: $7.5 \times 10^6 = 7,500,000$.
- 12) **Choice D is correct.** (8.EE.B.6) The y -intercept is the constant term b in $y = mx + b$, which is 4.
- 13) **Choice C is correct.** (8.NS.A.2) $\sqrt{18} = 3\sqrt{2} \approx 3 \times 1.41 = 4.23$.
- 14) **Choice C is correct.** (8.EE.B.5) Slope $k = \frac{7}{1} = 7$. Passes through origin, so $y = 7x$.
- 15) **Choice A is correct.** (8.EE.C.7) Subtract $4x$ and add 12: $4x = 20$. Divide by 4: $x = 5$.
- 16) **Choice D is correct.** (8.EE.C.8a) Subtract the second from the first: $(2x + 3y) - (2x - y) = 11 - 3$, so $4y = 8$, giving $y = 2$. Substitute: $2x - 2 = 3$, so $2x = 5$ and $x = \frac{5}{2}$. Solution: $(\frac{5}{2}, 2)$.
- 17) **Choice D is correct.** (8.EE.C.8b) "A number increased by 6" is $x + 6$; "at most" means $\leq$. So $x + 6 \leq 15$.
- 18) **Choice B is correct.** (8.F.A.2) X at day 0: 10 cm. Y at day 0: 15 cm. Since $15 > 10$, Y started taller.
- 19) **Choice D is correct.** (8.G.B.7) Interest on Aiden's card: $I = 500 \times 0.18 \times 0.5 = \45 . Aiden now owes \$545; Bea has \$500. The credit card cost Aiden \$45 more than not using it.
- 20) **Choice C is correct.** (8.EE.A.1) When dividing powers with the same base, subtract exponents: $\frac{x^7}{x^3} = x^{7-3} = x^4$.
- 21) **Choice C is correct.** (8.EE.A.2) $14 \times 14 = 196$, so $\sqrt{196} = 14$.
- 22) **The correct answer is B,D.** (8.F.A.1) Option B: each input (0, 1, 2, 3) has exactly one output (0, 1, 2, 3)—a function. Option D: each input (5, 6, 7) has exactly one output (1, 2, 3)—a function. Option A: input 1 maps to both 2 and 3—not a function. Option C: input 2 maps to both 4 and 5—not a function. Option E: input 1 maps to both 1 and 3—not a function.
- 23) **Choice D is correct.** (8.EE.A.4) Multiply the coefficients and add the exponents: $(3 \times 2) \times 10^{4+5} = 6 \times 10^9$.
- 24) **The correct answer is 0.75.** (8.F.B.4) The coefficient of h is 0.75.
- 25) **Choice A is correct.** (8.EE.C.7) $(x + 5)^2 = (x + 5)(x + 5) = x^2 + 5x + 5x + 25 = x^2 + 10x + 25$.
- 26) **Choice A is correct.** (8.F.A.3) The differences are $13 - 5 = 8$, $21 - 13 = 8$, $29 - 21 = 8$. A constant difference of 8 indicates a linear function.
- 27) **Choice B is correct.** (8.F.B.5) From 0 to 2, y increases from 1 to 3. From 2 to 4, y is constant at 3. From 4 to 6, y increases from 3 to 5. From 6 to 7, y remains at 5 (constant, not increasing).
- 28) **Choice B is correct.** (8.G.B.6, 8.G.B.7) Check: $6^2 + 8^2 = 36 + 64 = 100 = 10^2$. This is a scaled 3-4-5 triple (all multiplied by 2).
- 29) **The correct answer is 7.** (8.G.A.2) Since the triangles are congruent and PQ corresponds to ST (both equal 9 cm), the side QR corresponds to side TU . Therefore, $TU = QR = 7$ cm.



Hi, Strategy Solver!

◇ Grade 8 math rewards students who think before they calculate. You practiced choosing strategies, not just hunting for answers. This wide-ranging book gave you eight serious Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** That matters because stronger math students do not use one method for every question. They notice the structure and choose the tool that fits. ★

Strategy Moves

- **Estimate:** Know the neighborhood of the answer.
- **Simplify:** Rewrite numbers in friendlier forms.
- **Model:** Draw what the words describe.
- **Verify:** Put the answer back into the problem.

Grade 8 test-day tip: Pause for ten seconds before hard questions. A short plan can save several minutes.

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

Jay Daie

Your Strategy Guide

PRACTICE TODAY, SUCCEED TOMORROW!

Give your child the confidence and skills they need with **8 full-length Grade 8** Math practice tests that mirror 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.



BUILD SKILLS & BOOST CONFIDENCE

Strengthen understanding and feel prepared for test day.



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!



2 EXTRA ONLINE PRACTICE TESTS INCLUDED!

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More Practice. More Confidence.
Better Results.