

Louisiana

LEAP

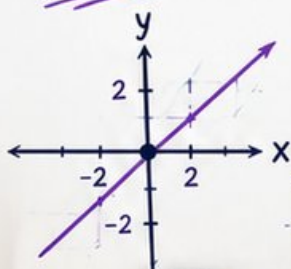
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

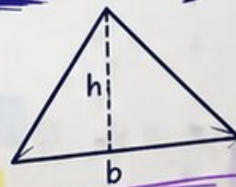
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



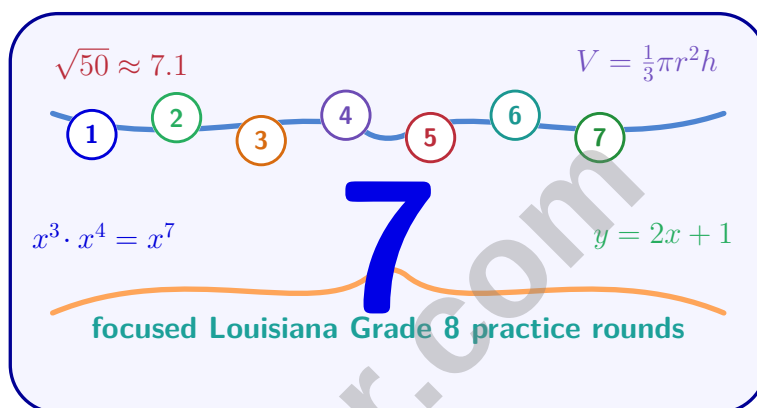
2 ONLINE
TESTS



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

7 Louisiana LEAP Grade 8 Math Practice Tests

Clear LEAP Practice for Grade 8 Equations, Functions, and Data



Seven 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!

Seven focused rounds for sharper LEAP math thinking

This book gives you seven 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 seven-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?

Seven LEAP tests, 280 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.
Test 7	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.

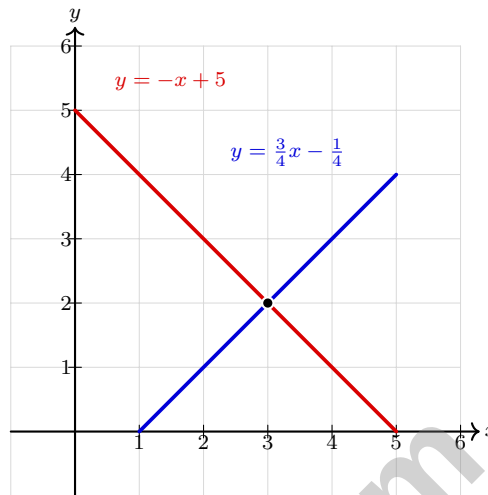


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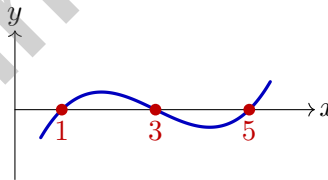
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- 1) Use the graph to identify the solution to the system: $y = -x + 5$ and $y = \frac{3}{4}x - \frac{1}{4}$.



- ☐ A. (2, 3)
 ☐ C. (4, 1)
- ☐ B. (5, 0)
 ☐ D. (3, 2)
- 2) A function has zeros at $x = 1$, $x = 3$, and $x = 5$. What does a zero represent on the graph?



- ☐ A. Where the graph crosses the y -axis
 ☐ C. Where the function is undefined
- ☐ B. Where the graph reaches its maximum
 ☐ D. Where the function value is zero (the x -intercept)

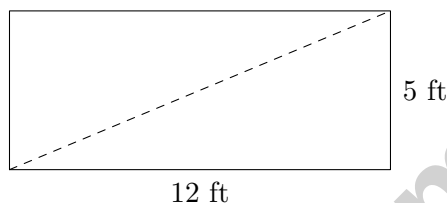


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3) A student claims: "If legs are a and b , then hypotenuse $= a \times b$." Is this correct?

- ☐ A. Yes, the formula is correct ☐ C. No; the correct formula is $c = a + b$
☐ B. No; the correct formula is $c = \sqrt{a^2 + b^2}$ ☐ D. No; the correct formula is $c = \sqrt{a + b}$

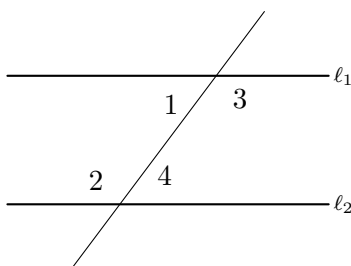
4) A composite figure has two congruent right triangles (legs 5 ft and 12 ft) arranged to form a rectangle. What is the area of the resulting rectangle?



- ☐ A. 30 ft² ☐ C. 120 ft²
☐ B. 60 ft² ☐ D. 169 ft²
- 5) Triangle A has sides 5, 12, 13. Triangle B has sides 7.5, 18, 19.5. Triangle C has sides 10, 24, 26. Which triangles are similar to Triangle A ?

- ☐ A. Only Triangle B ☐ C. Both Triangle B and C
☐ B. Only Triangle C ☐ D. Neither Triangle B nor C

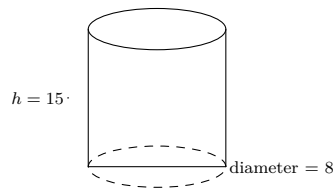
6) In the figure, which pair is an alternate interior angle pair?



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



7)



A student needs to find the volume of a cylinder with diameter 8 in and height 15 in. Which formula setup is correct? (Use $\pi \approx 3.14$.)

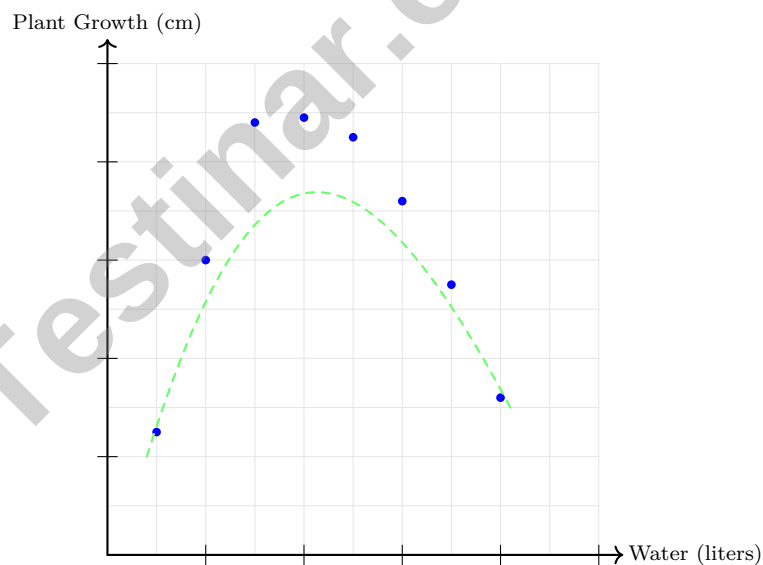
☐ A. $V = 3.14 \times 8^2 \times 15$

☐ C. $V = 3.14 \times 8 \times 15$

☐ B. $V = 3.14 \times 4^2 \times 15$

☐ D. $V = \frac{1}{3} \times 3.14 \times 8^2 \times 15$

- 8) A scatter plot shows plant growth (cm) versus amount of water given (liters) over 8 weeks. The first 3 liters produce rapid growth; beyond 3 liters, additional water causes little additional growth, then declining growth past 5 liters (from overwatering). This pattern is best described as:


☐ A. Negative linear correlation

☐ C. Nonlinear: increasing then decreasing (inverted parabola)

☐ B. Perfect positive correlation

☐ D. No correlation


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1) Convert $0.\overline{7}$ to a fraction.

- ☐ A. $\frac{1}{9}$
☐ B. $\frac{7}{10}$

- ☐ C. $\frac{7}{99}$
☐ D. $\frac{7}{9}$

2) Two students solve $2x + 5 = 11$ and get different answers: Student A gets $x = 3$ and Student B gets $x = 4$. Without solving, how can you determine which student is correct?

- ☐ A. Substitute each value into the original equation to check which one works
☐ B. Solve the equation and see who matched your answer
☐ C. Check which value is smaller
☐ D. Divide 11 by 2 to see which is closer

3) For what value of c does the system $\begin{cases} y = 2x + 3 \\ y = 2x + c \end{cases}$ have no solution?

- ☐ A. $c = 3$ only
☐ B. $c = 0$ only
☐ C. Any $c \neq 3$
☐ D. c can be any value

4) Divide: $\frac{8 \times 10^8}{2 \times 10^3}$

- ☐ A. 10×10^5
☐ B. 6×10^5
☐ C. 4×10^{11}
☐ D. 4×10^5

5) Which statement about the graph of a function is true?

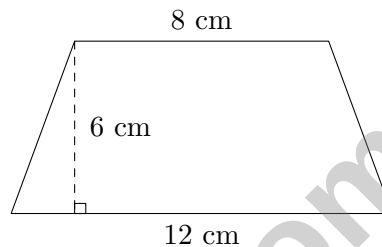
- ☐ A. A function can cross the y -axis twice
☐ B. A function must cross the x -axis exactly once
☐ C. A function can have multiple x -intercepts but only one y -intercept
☐ D. A function must cross both axes exactly once



- 6) A right triangle has one leg equal to $\sqrt{15}$ and a hypotenuse equal to $\sqrt{31}$. What is the other leg?

☐ A. $\sqrt{15}$ ☐ C. 4
☐ B. $\sqrt{46}$ ☐ D. 8

- 7) A trapezoid has parallel sides of 8 cm and 12 cm with a height of 6 cm. This trapezoid is part of a composite figure. What is its area?



☐ A. 48 cm^2 ☐ C. 72 cm^2
☐ B. 60 cm^2 ☐ D. 80 cm^2

- 8) A square has area 9 cm^2 . If the square is dilated by a scale factor of 3, what is the area of the dilated square?

☐ A. 27 cm^2 ☐ C. 9 cm^2
☐ B. 81 cm^2 ☐ D. 36 cm^2

- 9) Alice, Bob, and Clara are three friends. Alice is twice as old as Bob. Clara is 1 year older than Bob. The sum of all their ages is 49 years. How old is Bob?

☐ A. 8 ☐ C. 12
☐ B. 10 ☐ D. 14



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- 1) Company A: $A(d) = 40 + 0.15d$. Company B through $(100, 55)$ and $(200, 80)$. Which has higher rate?

- ☐ A. Company A
 ☐ C. Both same.
☐ B. Company B
 ☐ D. Cannot be determined.

- 2) Two points are at $(-3, 4)$ and $(5, -2)$. Calculate the distance between them. Round to the nearest tenth if necessary.

- 3) Of 320 patients at a clinic, 200 were prescribed medication and 120 were not. Among those prescribed medication, 160 showed improvement. What is the relative frequency of patients showing improvement among those prescribed medication?

- ☐ A. 0.50
 ☐ C. 0.67
☐ B. 0.80
 ☐ D. 0.75

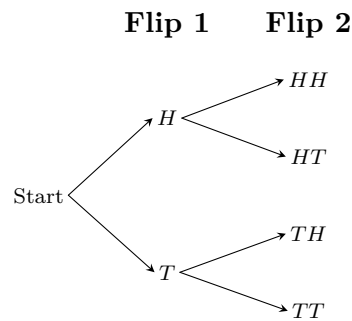
4)

Dataset	Mean	MAD
Set A	50	3
Set B	50	9

Which interpretation correctly compares the two data sets?

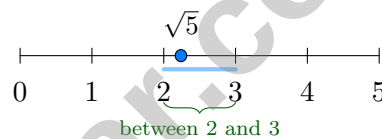
- ☐ A. Set A has three times fewer values than Set B
 ☐ C. Set A and Set B have the same spread
☐ B. Set B's values are less predictable
 ☐ D. Set B has a higher mean





5)

A tree diagram shows all possible outcomes when a coin is flipped twice. According to the diagram, how many total outcomes are there?

☐ A. 2☐ C. 4☐ B. 6☐ D. 3

6)

Based on the number line, which statement is true?

☐ A. $\sqrt{5}$ is rational☐ C. $\sqrt{5} = 2.5$ ☐ B. $\sqrt{5}$ is between 1 and 2☐ D. $\sqrt{5} \approx 2.24$ 7) Convert $0.\overline{7}$ to a fraction. Which step is incorrect?☐ A. Let $x = 0.\overline{7}$.☐ C. $10x - x = 7.\overline{7} - 0.\overline{7} = 7$ is wrong; should be 0.7.☐ B. $10x = 7.\overline{7}$.☐ D. $9x = 7$, so $x = \frac{7}{9}$.

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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 D is correct.** (8.EE.C.8a) The two lines intersect at the marked point. Verify: $y = -3 + 5 = 2$ ✓ and $y = \frac{3}{4}(3) - \frac{1}{4} = \frac{9}{4} - \frac{1}{4} = 2$ ✓.
- 2) **Choice D is correct.** (8.F.B.5) A zero of a function is a point where $f(x) = 0$, represented on a graph as an x -intercept (where the curve crosses the x -axis). Option A is a y -intercept, B is a maximum, C is undefined.
- 3) **Choice B is correct.** (8.G.B.6, 8.G.B.7) The student is confusing the Pythagorean Theorem with multiplication. For legs 3 and 4: $3 \times 4 = 12$ is incorrect, but $\sqrt{3^2 + 4^2} = \sqrt{25} = 5$ is correct.
- 4) **Choice B is correct.** (8.G.B.7) Two congruent right triangles form a rectangle. Area = $5 \times 12 = 60 \text{ ft}^2$.
- 5) **Choice C is correct.** (8.G.A.4) For B: $\frac{7.5}{5} = \frac{18}{12} = \frac{19.5}{13} = 1.5$ (proportional). For C: $\frac{10}{5} = \frac{24}{12} = \frac{26}{13} = 2$ (proportional). Both are similar.
- 6) **Choice B is correct.** (8.G.A.5) Alternate interior angles are on opposite sides of the transversal and between the parallel lines.
- 7) **Choice B is correct.** (8.G.C.9) The radius is half the diameter: $r = 8 \div 2 = 4$ in. Cylinder volume: $V = \pi r^2 h = 3.14 \times 4^2 \times 15$.
- 8) **Choice C is correct.** (8.SP.A.1) The relationship changes from steeply increasing to flat to decreasing. This curve (inverted parabola) is nonlinear—the rate of change is not constant and the direction reverses.
- 9) **Choice B is correct.** (8.EE.C.7b) Option B specifies distinct positions (first position vs second position), so the order in which students are arranged matters—this is a permutation. Options A, C, and D are selections where order does not matter (combinations): we only care WHO is selected, not the order.
- 10) **Choice B is correct.** (8.EE.C.7) These two numbers multiply to -12 and add to 1 (the middle coefficient). So $x^2 + x - 12 = (x - 3)(x + 4)$.
- 11) **Choice B is correct.** (8.F.A.1) Each student ID uniquely identifies one student with one current math grade. Options A, C, and D can pair one input with multiple outputs.
- 12) **Choice B is correct.** (8.F.B.4) The constant term 80 is the y -intercept, which is the initial cost when $t = 0$ (before any monthly charges). This one-time equipment fee is paid at the start.
- 13) **Choice B is correct.** (8.G.A.2) Congruent triangles have equal corresponding angles. Triangle ABC has the same angle measures as triangle XYZ: $45^\circ, 60^\circ, 75^\circ$.
- 14) **Choice B is correct.** (8.G.A.3) Area scales by k^2 . With $k = \frac{1}{3}$: $45 \times \left(\frac{1}{3}\right)^2 = 45 \times \frac{1}{9} = 5$.
- 15) **Choice B is correct.** (8.G.B.8) This forms a 3-4-5 right triangle. The hypotenuse (ladder length) is $\sqrt{3^2 + 4^2} = \sqrt{9 + 16} = 5$ feet.
- 16) **Choice D is correct.** (8.G.B.7) A linear pair of angles is supplementary. So the other angle is $180 - 42 = 138^\circ$.
- 17) **Choice B is correct.** (8.G.C.9) Base area: $B = \frac{1}{2} \times 6 \times 8 = 24 \text{ in}^2$. Volume: $V = \frac{1}{3} \times 24 \times 10 = 80 \text{ in}^3$.
- 18) **Choice B is correct.** (8.G.A.5) A hexagon's interior angles add to 720° . The known angles add to $68 + 118 + 102 + 150 + 106 = 544^\circ$, so the sixth angle is $720 - 544 = 176^\circ$.
- 19) **Choice A is correct.** (8.SP.A.4) This is a row-conditional relative frequency. Among pizza-likers (30 total), 15 are girls: $\frac{15}{30} = 0.5 = 50\%$.
- 20) **The correct answer is B,D.** (8.EE.C.7) A: $5x + 2 = 5x - 3 \Rightarrow 2 = -3$ (no solution). B: $2x + 4 = x + 8 \Rightarrow x = 4$ (one solution). C: $3x - 5 = 3x - 5$ (identity, infinitely many). D: $4x + 1 = 2x + 9 \Rightarrow 2x = 8 \Rightarrow x = 4$ (one solution). E: $x = x$ (identity, infinitely many). Correct answers: B and D.
- 21) **Choice B is correct.** (8.G.B.8) MAD measures average distance from the mean. Deviations: $|0 - 2| = 2$, $|1 - 2| = 1$ (twice), $|2 - 2| = 0$, $|6 - 2| = 4$. Sum = 8. MAD = $8/5 = 1.6$, showing typical spread.
- 22) **Choice B is correct.** (8.G.B.7) $P(\text{rolling 1 or 2}) = \frac{2}{6} = \frac{1}{3}$. The complement is $P(\text{rolling 3, 4, 5, or 6}) = 1 - \frac{1}{3} = \frac{2}{3}$, not $\frac{1}{3}$.
- 23) **Choice D is correct.** (8.SP.A.2) The data shows steep growth early, flattening near age 15–16. This reflects human biology: rapid growth during childhood and early teens, then plateauing as growth ends in adulthood.



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Hi, Momentum Builder!

◇ Finishing a Grade 8 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 7 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 8 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 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!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

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 | ✓ 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! |



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