

3

New Jersey

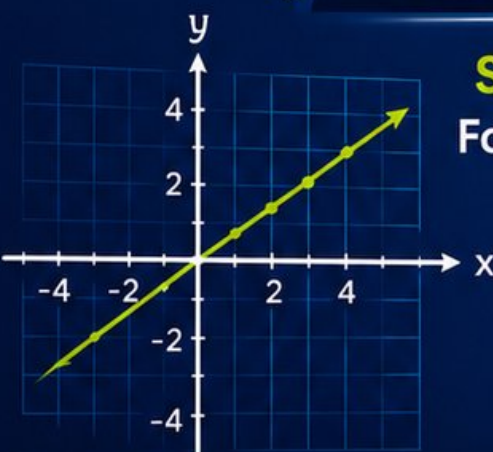
NJSLA

GRADE 8

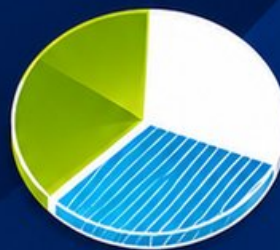
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



$$y = mx + b$$
$$2x + 5 = 13$$
$$x = 4$$



3 PRINTED TESTS



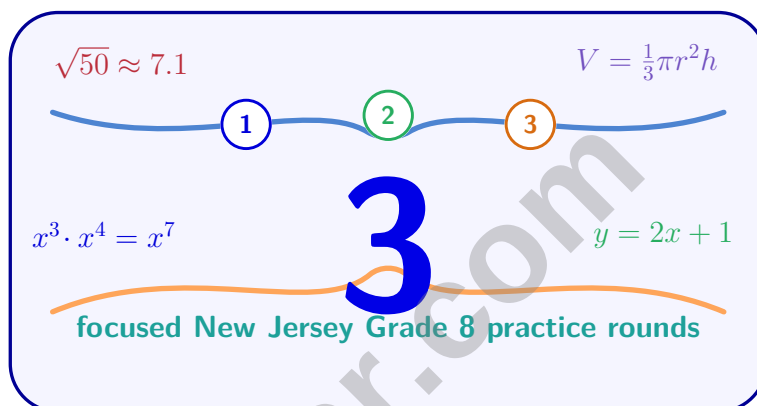
2 ONLINE TESTS



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

3 New Jersey NJSLA Grade 8 Math Practice Tests

Targeted NJSLA Review for Algebra, Geometry, and Data Skills



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

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Welcome, New Jersey Grade 8 Problem Solver!

Three focused rounds for sharper NJSLA math thinking

This book gives you three full Grade 8 NJSLA 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 New Jersey 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 three-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.

New Jersey 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?

Three NJSLA tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	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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Table of Contents



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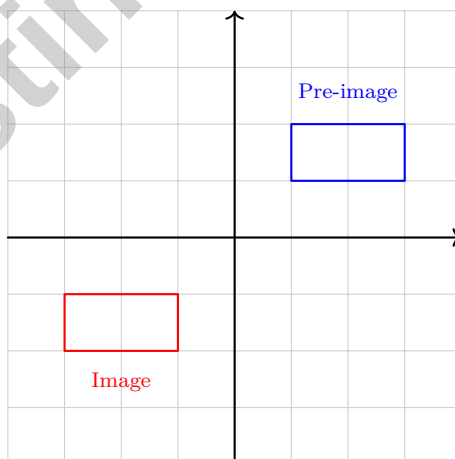
- 1) A decorative shape consists of a cube with side 5 cm topped with a square pyramid (same base, height 5 cm). Which choice is closest to the total volume?

☐ A. 125 cm³☐ C. 208 cm³☐ B. 166 cm³☐ D. 250 cm³

- 2) A cylindrical grain silo has a diameter of 10 feet and a height of 20 feet. The curved exterior wall must be painted. If paint costs \$2 per square foot, what is the total cost of paint needed? (Use $\pi \approx 3.14$.)

☐ A. \$314☐ C. \$1,256☐ B. \$628☐ D. \$1,570

- 3) Write 4.7×10^{-4} in decimal (standard) form.



4)

Looking at the two rectangles, which transformation was applied?

☐ A. Reflection across the x -axis☐ C. 180° rotation about the origin☐ B. Reflection across the y -axis☐ D. Dilation by scale factor 2

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5) A line passes through $(-2, 1)$ and $(2, 9)$. What is the slope?

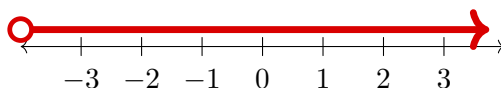
☐ A. $\frac{1}{2}$

☐ B. 8

☐ C. 4

☐ D. 2

6) Which shows the solution to $x - 3 > -7$ on a number line?



☐ A. $x > -4$

☐ B. $x < -4$

☐ C. $x \geq -4$

☐ D. $x \leq -4$

7) Which inequality has a solid boundary line?

☐ A. $y > 3x - 2$

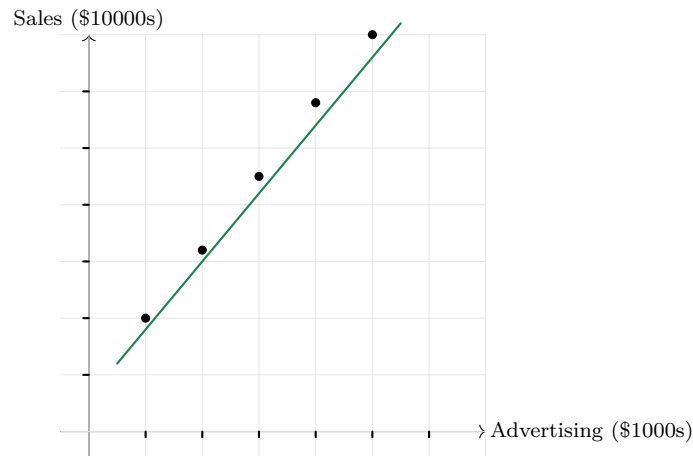
☐ B. $y < x + 5$

☐ C. $y \geq -x + 4$

☐ D. $y \neq 2x - 1$

8) Convert $0.\overline{34}$ to a fraction in simplest form.





9)

A business tracks advertising spend vs. sales. The model is $S = 1.1a + 0.8$, where S is sales and a is advertising. What does the 0.8 intercept tell you?

- ☐ A. Sales decrease by \$0.80 per \$1000 ad spend ☐ C. The company spends \$800 on advertising initially
☐ B. Base sales of \$8000 occur with zero ad spend ☐ D. Maximum possible sales are \$8000

10) A borrower needs to repay \$1,000. She has time but limited monthly cash flow. Comparing the plans, which choice represents the BEST overall financial decision (lowest total cost + manageable payments)?

- ☐ A. \$50/month for 24 months (total \$1,200; low monthly cost) ☐ C. \$125/month for 8 months (total \$1,000; high monthly cost)
☐ B. \$100/month for 12 months (total \$1,200; medium monthly cost) ☐ D. \$83/month for 18 months (total \$1,494; expensive overall)



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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) Convert $0.\overline{81}$ to a fraction in simplest form.

☐ A. $\frac{81}{100}$

☐ B. $\frac{1}{81}$

☐ C. $\frac{81}{90}$

☐ D. $\frac{81}{99} = \frac{9}{11}$

3) Which is the best estimate of $\pi + \sqrt{10}$?

☐ A. $3.1 + 3.1 = 6.2$

☐ B. $\pi + 10 = 13.14$

☐ C. $4 + 4 = 8$

☐ D. $3.14 + 3.16 = 6.30$

4) What is 9.0×10^{-5} in standard form?

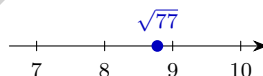
☐ A. 90,000

☐ B. 0.9

☐ C. 0.00009

☐ D. 0.000009

5) Where on a number line would $\sqrt{77}$ be located?



☐ A. At 9

☐ B. Between 9 and 10

☐ C. Between 8 and 9

☐ D. Between 7 and 8

6) Two rectangular prisms have the same volume of 120 cm^3 . Prism A has dimensions $10 \times 6 \times 2 \text{ cm}$. Prism B has dimensions $8 \times 5 \times 3 \text{ cm}$. Which prism has the greater surface area?

☐ A. Prism A with $SA = 184 \text{ cm}^2$

☐ B. Prism A with $SA = 244 \text{ cm}^2$

☐ C. Prism B with $SA = 158 \text{ cm}^2$

☐ D. Prism B with $SA = 206 \text{ cm}^2$



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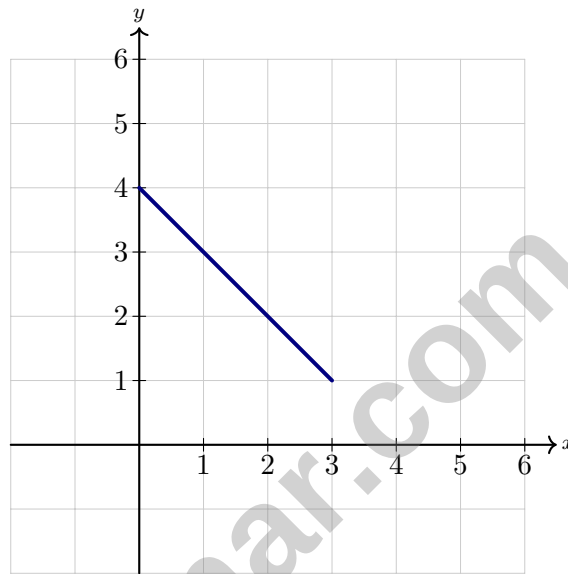
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7) A point (p, q) is reflected across the y -axis, giving $(-p, q)$. Then it is reflected across the x -axis, giving $(-p, -q)$. What single transformation produces the same result?

- ☐ A. 90° rotation about the origin ☐ C. 270° rotation about the origin
☐ B. 180° rotation about the origin ☐ D. Reflection across the line $y = x$



8)

Which ordered pair is a solution to the equation of the line shown?

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

9) A company allows workers to earn \$12 per hour plus a \$50 bonus. How many hours must they work to earn at least \$170?

- ☐ A. $h < 10$ ☐ C. $h \geq 10$
☐ B. $h > 10$ ☐ D. $h \leq 10$



1) Simplify using the laws of exponents: $\frac{x^7}{x^3}$

☐ A. x^{10}

☐ C. x^4

☐ B. x^{21}

☐ D. x^{-4}

2) Triangle P has sides 8, 15, 17. Triangle Q has sides 12, 22.5, 25.5. Are they similar?

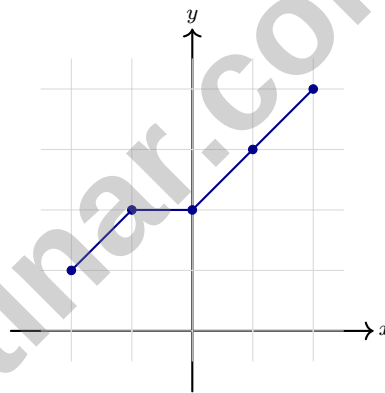
☐ A. No, the sides are not equal

☐ C. Yes, all sides have the same ratio 1.5 to Q 's sides

☐ B. No, the ratios are 1.5, 1.5, 1.5 which is not constant

☐ D. Only if corresponding angles equal 90°

3) From the graph of $f(x)$, what is $f(-1)$?



☐ A. -1

☐ C. 1

☐ B. 2

☐ D. 3

4) Which decimal representation indicates an irrational number?

☐ A. 0.875

☐ D. 2.718281828... (non-repeating,

☐ B. 0.123123123... (repeating pattern) non-terminating)

☐ C. $0.5\overline{3}$ (where 3 repeats)



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5) What is $0.\overline{6}$ as a fraction?

- ☐ A. $\frac{1}{6}$
☐ B. $\frac{6}{10}$

- ☐ C. $\frac{6}{99}$
☐ D. $\frac{2}{3}$

6) Which is the best estimate of $\sqrt{2} \times \sqrt{3}$?

- ☐ A. 2.0
☐ B. 5.0

- ☐ C. 3.0
☐ D. 2.4

7) A student incorrectly wrote 56,200 in scientific notation as 56.2×10^3 . What is the correct form?

- ☐ A. 562×10^2
☐ B. 5.62×10^3

- ☐ C. 56.2×10^3
☐ D. 5.62×10^4

8) Which is larger: $\sqrt{15}$ or $\sqrt{14}$?

- ☐ A. They are equal
☐ B. Cannot compare

- ☐ C. $\sqrt{14}$
☐ D. $\sqrt{15}$

9) A table shows:

x	0	3	6
y	5	2	-1

What is the rate of change (slope)?



New Jersey NJSLA 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 New Jersey NJSLA 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.G.C.9)** Radius $r = 5$ feet. Lateral (curved) surface area $= 2\pi rh = 2(3.14)(5)(20) = 628 \text{ sq. ft.}$ Cost $= 628 \times \$2 = \$1,256$.
- 3) **The correct answer is 0.00047.** **(8.EE.A.3)** Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 4) **Choice C is correct.** **(8.G.A.1)** A 180° rotation about the origin maps $(x, y) \rightarrow (-x, -y)$. The pre-image at $(1, 1)$ maps to $(-1, -1)$ in the image, confirming the rotation.
- 5) **Choice D is correct.** **(8.EE.B.6)** Slope $= \frac{9-1}{2-(-2)} = \frac{8}{4} = 2$.
- 6) **Choice A is correct.** **(8.EE.C.7)** Add 3: $x > -4$. Open circle at -4 with right ray confirms this.
- 7) **Choice C is correct.** **(8.G.B.8)** The symbols $>$ and $<$ (strict inequalities) use DASHED lines. The symbols $\geq$ and $\leq$ (non-strict) use SOLID lines because the boundary points are INCLUDED in the solution.
- 8) **The correct answer is $\frac{34}{99}$.** **(8.NS.A.1)** Set $x = 0.34$, so $100x = 34.34$. Subtracting: $100x - x = 34$, giving $99x = 34$ and $x = \frac{34}{99}$.
- 9) **Choice B is correct.** **(8.SP.A.3)** The intercept 0.8 (in units of \$10000) means when $a = 0$, $S = 0.8$, or \$8000 baseline sales before advertising.
- 10) **Choice A is correct.** **(8.EE.B.5)** Option C has zero interest (lowest cost) but requires \$125/month. Option A costs \$200 extra but is affordable at \$50/month. For someone with limited cash flow, Option A balances cost and affordability.
- 11) **Choice C is correct.** **(8.EE.A.2)** $10 \times 10 \times 10 = 1000$, so $\sqrt[3]{1000} = 10$.
- 12) **Choice D is correct.** **(8.EE.A.4)** Multiply coefficients: $3 \times 6 = 18$. Add exponents: $10^{-4+(-5)+8} = 10^{-1}$. Rewrite $18 \times 10^{-1} = 1.8 \times 10^0 = 1.8$.
- 13) **Choice D is correct.** **(8.EE.B.5)** Slope $= \frac{\Delta y}{\Delta x} = \frac{15-0}{5-0} = 3$. For a proportional line through the origin, the slope equals the unit rate.
- 14) **Choice C is correct.** **(8.EE.C.7)** Distribute: $3x - 12 = 2x + 5$. Subtract $2x$: $x - 12 = 5$. Add 12: $x = 17$. Check: $3(17 - 4) = 3(13) = 39$ and $2(17) + 5 = 39$ ✓. (Distractor B from forgetting to distribute the 3; D from arithmetic error.)
- 15) **Choice A is correct.** **(8.EE.C)** Check $(3, 6)$ in both equations: $6 = 2(3) = 6$ ✓ and $6 = 3 + 3 = 6$ ✓. The solution is correct.
- 16) **Choice B is correct.** **(8.EE.C.7)** FOIL: $(x - 8)(x + 3) = x^2 + 3x - 8x - 24 = x^2 - 5x - 24$.
- 17) **Choice C is correct.** **(8.F.A.1)** The vertical line test is the definition test for functions. If no vertical line intersects the graph more than once, it is a function.
- 18) **Choice A is correct.** **(8.F.A.2)** Slope of u : $(3 - (-1))/(2 - 0) = 4/2 = 2 > 0$. Slope of v : $-1 < 0$. Only u is positive.
- 19) **The correct answer is A, C.** **(8.NS.A.1)** $\sqrt{169} = 13$ is rational (perfect square). The repeating decimal $0.777\ldots = \frac{7}{9}$ is rational. The other values are irrational: $\sqrt{170}$ (non-perfect square), 2π (irrational multiple of π), and $\sqrt{2} + 1$ (irrational plus rational is irrational).
- 20) **Choice A is correct.** **(8.F.A.3)** $y = \frac{7}{2}x - 6$ is linear with slope $\frac{7}{2}$ and y -intercept -6 . Option B expands to $y = x^2 - x$ (nonlinear), and C and D are exponential and rational functions.
- 21) **Choice C is correct.** **(8.F.B.4)** Proportional functions have form $y = mx$ (intercept $= 0$). Option C has intercept 1, so it is not proportional.
- 22) **Choice C is correct.** **(8.F.B.5)** The graph shows a flat segment at 100% from hours 0 to 2, indicating no charge change during idle time. From hour 2 onward, the slope is negative (draining). Option D is false because the battery approaches 1.5%, not 0%.
- 23) **Choice B is correct.** **(8.G.A.2)** Congruent triangles have equal corresponding angles. Triangle ABC has the same angle measures as triangle XYZ: $45^\circ, 60^\circ, 75^\circ$.
- 24) **Choice C is correct.** **(8.G.A.3)** Reflecting $(1, 1) \rightarrow (1, -1)$, then translating left 1 gives $(0, -1)$. This matches a vertex of H' , and the same rule maps the whole rectangle correctly.



Hi, Grade 8 Math Star!

◇ You finished this practice set with real effort. Grade 8 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 8 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 8 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 8 Math Friend

PRACTICE TODAY, ACHIEVE TOMORROW!

GRADE
8

Give your child the edge they need with **3 full-length** Grade 8 Math practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, boosting confidence, and preparing for 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!

Use these two additional online practice tests for extra review after the printed tests.

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PRACTICE. PREPARE. SUCCEED.



Testinar

More Practice. More Confidence.
Better **Results**.