

10

New Jersey

NJSLA

GRADE

8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

10

PRINTED TESTS



2

ONLINE TESTS



Build Confidence



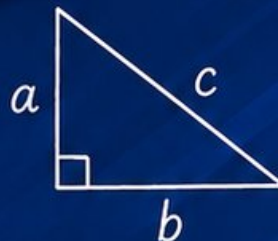
Master Key Math Skills



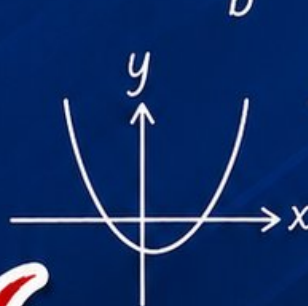
Answer Explanations for
Every Question



Test-Taking Strategies
That Work



$$y = mx + b$$



$$3x - 7 = 2(x + 5)$$
$$x = 17$$

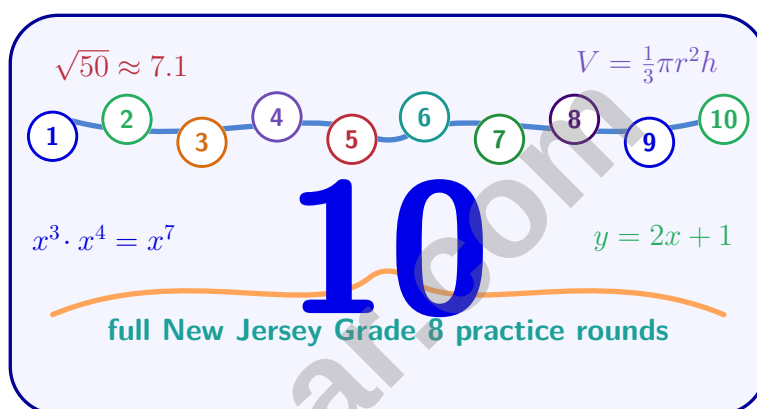


USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

10 New Jersey NJSLA Grade 8 Math Practice Tests

New Jersey Grade 8 NJSLA Practice for shore-to-school practice with proportional models, exponent reasoning, algebra, geometry, and data



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

Jay Daie and Reza Nazari



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Welcome, New Jersey Grade 8 Problem Solver!

Ten focused rounds for sharper New Jersey NJSLA math thinking

This book gives you ten full Grade 8 NJSLA math practice tests. Each round is built to help you notice structure, compare quantities, use linear reasoning, handle real numbers, and explain your thinking with care.

Grade 8 standards focus: This page supports **Similarity and Dilations** (8.G.A.4): Understand that a two-dimensional figure is similar to another if the second can be obtained by a sequence of rotations, reflections, translations, and dilations. You will also meet **Linear vs. Nonlinear Functions** (8.F.A.3): Interpret $y = mx + b$ as defining a linear function. Give examples of functions that are not linear.

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 ten-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 a proportion, equation, diagram, number line, 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.

Grade 8 standards focus: Keep the routine connected to **The Pythagorean Theorem** (8.G.B.7): Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. A second useful connection is **Transformations on the Coordinate Plane** (8.G.A.3): Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

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?

Ten New Jersey NJSLA tests, 400 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Linear relationships, integer exponents, scientific notation, real-number reasoning, and careful reading.
Tests 4–6	Expressions, equations, inequalities, transformations, geometry, and multi-step problem solving.
Tests 7–9	Data analysis, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final New Jersey round to show growth across the whole book.
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.

Grade 8 standards focus: Use these habits while practicing **Scatter Plots and Patterns in Data** (8.SP.A.1): Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association. It also prepares you for **Finding Distance with the Pythagorean Theorem** (8.G.B.8): Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

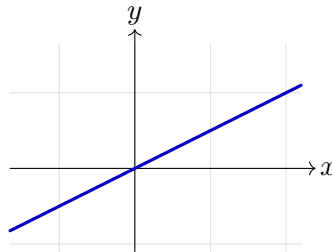


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& answers

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- 1) Graph $y \geq \frac{1}{2}x$. Which region should be shaded?



- ☐ A. Below the line only ☐ C. Above and on the line
☐ B. Above the line only ☐ D. Below and on the line
- 2) A cylinder has radius 4 cm and height 9 cm. What is the difference between total surface area and lateral surface area?
- ☐ A. $32\pi \text{ cm}^2$ ☐ C. $72\pi \text{ cm}^2$
☐ B. $16\pi \text{ cm}^2$ ☐ D. $40\pi \text{ cm}^2$
- 3) The best-fit line for a dataset is $y = 0.6x + 2.4$. Is the relationship positive or negative?
- ☐ A. Positive (slope > 0) ☐ C. No relationship
☐ B. Negative (slope < 0) ☐ D. Cannot be determined
- 4) $\frac{7.5 \times 10^9}{2.5 \times 10^5} = ?$
- ☐ A. 10×10^4 ☐ C. 3×10^4
☐ B. 3.75×10^4 ☐ D. 5×10^{14}



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

☐ A. $x \geq 3$

☐ C. $x \geq 1$

☐ B. $x \leq 3$

☐ D. $x \leq 1$

6) Factor completely: $5x^2 + 35x + 50$.

☐ A. $5(x^2 + 7x + 10)$

☐ C. $5(x + 2)(x + 5)$

☐ B. $(5x + 5)(x + 10)$

☐ D. $5(x + 10)(x + 1)$

7) A student claims: "If input 5 appears three times in a table, it cannot be a function." Is the student correct?

☐ A. Yes, any repeated input means it is not a function.

☐ C. No, repeated inputs are only a problem if outputs differ.

☐ B. No, repeated inputs are never a problem.

☐ D. Yes, the domain cannot have repeated values.

8) Function $p(x) = \frac{3}{2}x - 4$ and the table for function q : $(0, 2)$, $(2, 5)$, $(4, 8)$. Which has a steeper slope?

x	0	2	4
$q(x)$	2	5	8

☐ A. $p(x)$
☐ C. Both have equal slopes.

☐ B. $q(x)$
☐ D. Cannot be determined.

9) Which table is NONLINEAR?

x	0	1	2	3
y	0	1	4	9

☐ A. No, all values are nonnegative

☐ C. No, y increases with x
☐ B. Yes, first differences are not constant $(1, 3, 5)$
☐ D. Yes, because $y = x^2$

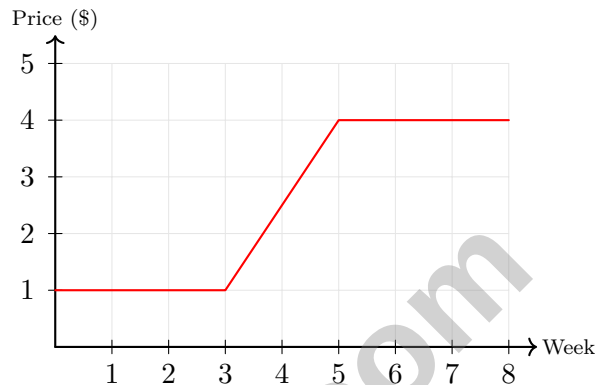

- 10) Water drains from a tank at a rate of 3 gallons per minute. The tank starts with 120 gallons. Which equation gives the amount of water W (in gallons) after t minutes?

☐ A. $W = -3t + 120$

☐ C. $W = 120t - 3$

☐ B. $W = 3t + 120$

☐ D. $W = 120 - t$



11)

An item's price over 8 weeks is shown. During which week does the price increase the fastest?

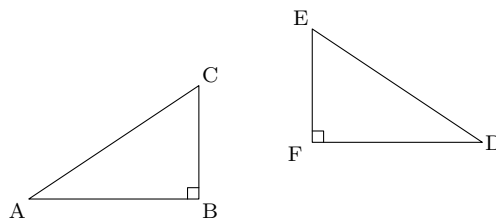
☐ A. Weeks 1-3

☐ C. Weeks 3-5

☐ B. Week 3

☐ D. Weeks 5-8

- 12) Two congruent right triangles are positioned differently. Triangle 1 has a right angle at vertex B. Triangle 2 has a right angle at vertex F. What can you conclude?


☐ A. The hypotenuses are different lengths

☐ C. Triangle 1 is larger than Triangle 2

☐ B. The triangles have the same side lengths

☐ D. The angles are all different


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1) Simplify $(p^{-2})^3$.

☐ A. p^1

☐ B. p^6

☐ C. p^{-5}

☐ D. p^{-6}

2) Triangle with vertices at $(1, 0)$, $(3, 0)$, and $(2, 2)$ is dilated by a scale factor of 0.5 from the origin. What is the area ratio of the new triangle to the original?

☐ A. 0.5

☐ B. 0.25

☐ C. 2

☐ D. 4

3) A car travels 180 miles in 3 hours. What is the slope (speed in miles per hour)?

4) If $f(x) = \frac{2x+5}{3}$, what is $f(4)$?

☐ A. 3

☐ B. 4

☐ C. $\frac{26}{3}$

☐ D. $\frac{13}{3}$

5) If $\sqrt{x}$ is rational and x is a positive integer, what must be true about x ?

☐ A. x is odd

☐ B. x is greater than 10

☐ C. x is prime

☐ D. x is a perfect square

6) If $x = 0.\overline{36}$, which shows the first equation in the standard method?

☐ A. $10x = 0.36$

☐ B. $1000x = 360.\overline{36}$

☐ C. $36x = 0.\overline{36}$

☐ D. $100x = 36.\overline{36}$



7) Which is the best estimate of $\frac{\pi}{2}$?

☐ A. 1.27

☐ C. 2.14

☐ B. 3.14

☐ D. 1.57

8) Express 0.0072 in scientific notation.

☐ A. 0.72×10^{-2}

☐ C. 7.2×10^{-4}

☐ B. 7.2×10^3

☐ D. 7.2×10^{-3}

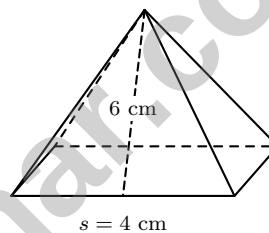
9) Between which two consecutive integers does $\sqrt[3]{20}$ lie?

☐ A. 4 and 5

☐ C. 3 and 4

☐ B. 1 and 2

☐ D. 2 and 3



10)

A square pyramid has a square base with side length 4 cm and slant height 6 cm. What is its total surface area?

☐ A. 16 cm^2

☐ C. 80 cm^2

☐ B. 64 cm^2

☐ D. 96 cm^2



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& answers

1) A plane is descending. Its altitude decreases 2000 feet for every 5 minutes. What is the slope of altitude versus time?

- ☐ A. 400 feet per minute
☐ B. 2000 feet per minute

- ☐ C. $\frac{5}{2000}$ feet per minute
☐ D. -400 feet per minute

2) Which law does this diagram represent?

Same base $\rightarrow$ Add the exponents

$$x^m \cdot x^n = x^{m+n}$$

Example: $2^3 \times 2^4 = 2^{3+4} = 2^7$

Same base required.

Which of the following uses this same law?

☐ A. $(5a)^2 = 25a^2$

☐ C. $2^4 \cdot 2^5 = 2^9$

☐ B. $\frac{p^7}{p^3} = p^4$

☐ D. $(y^3)^4 = y^{12}$

3) A rhombus has all four sides equal to 8 cm. After being reflected across the y -axis, what is the length of each side of the reflected rhombus?

- ☐ A. The sides change length
☐ B. 4 cm

- ☐ C. 16 cm
☐ D. 8 cm

4) A phone company charges \$25 per month plus \$0.10 per text message. What is the total monthly cost for 100 texts?



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5) A restaurant has 50 tables. Small tables seat 2 people; large tables seat 4 people. To seat at least 160 people, how many large tables are needed at minimum?

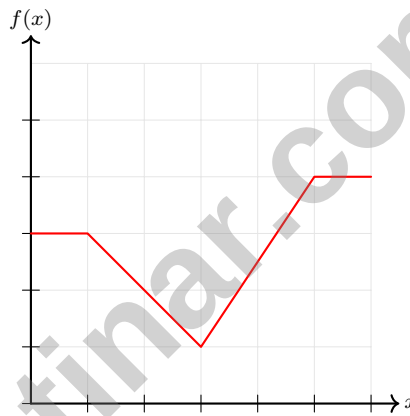
☐ A. 20

☐ C. 30

☐ B. 25

☐ D. 35

6) A car travels at a constant speed of 60 mph. After starting, the distance d (in miles) traveled after h hours is given by which equation?

☐ A. $d = 60h$
☐ C. $d = h + 60$
☐ B. $d = 60h + 1$
☐ D. $d = \frac{60}{h}$


7)

On which interval is the rate of change the most negative?

☐ A. From $x = 0$ to $x = 1$
☐ C. From $x = 3$ to $x = 5$
☐ B. From $x = 1$ to $x = 3$
☐ D. From $x = 5$ to $x = 6$

8) A point is reflected across the line $y = -x$. The image is at $(2, -5)$. What is the pre-image?

☐ A. $(-5, 2)$
☐ C. $(2, 5)$
☐ B. $(-2, 5)$
☐ D. $(5, -2)$


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 C is correct.** (8.G.B.8) The inequality $\geq$ means "greater than or equal," so shade ABOVE the line. The SOLID line is included in the solution.
- 2) **Choice A is correct.** (8.G.C.9) Total SA = $2\pi r^2 + 2\pi rh = 2\pi(16) + 2\pi(4)(9) = 32\pi + 72\pi = 104\pi$ cm². Lateral SA = $2\pi(4)(9) = 72\pi$ cm². Difference = $104\pi - 72\pi = 32\pi$ cm² (the two circular bases).
- 3) **Choice A is correct.** (8.SP.A.3) A positive slope (0.6) means as x increases, y increases, indicating a positive relationship.
- 4) **Choice C is correct.** (8.EE.A.4) Divide coefficients: $7.5 \div 2.5 = 3$. Subtract exponents: $10^{9-5} = 10^4$. Result: 3×10^4 .
- 5) **Choice A is correct.** (8.EE.C.7) Distribute: $2x - 2 \geq 4$. Add 2: $2x \geq 6$. Divide by 2: $x \geq 3$.
- 6) **Choice C is correct.** (8.EE.C.7) GCF is 5: $5x^2 + 35x + 50 = 5(x^2 + 7x + 10) = 5(x+2)(x+5)$.
- 7) **Choice C is correct.** (8.F.A.1) A relation is a function only if each input has exactly one output. If input 5 appears three times but with the same output, it is still a function (just redundantly listed).
- 8) **Choice C is correct.** (8.F.A.2) Slope of p : $\frac{3}{2} = 1.5$. From table q : $(5-2)/(2-0) = 3/2 = 1.5$. Both have slope 1.5.
- 9) **Choice B is correct.** (8.F.A.3) The differences between consecutive y -values are $1-0 = 1$, $4-1 = 3$, $9-4 = 5$, which are not constant, indicating a nonlinear (quadratic) function.
- 10) **Choice A is correct.** (8.F.B.4) Initial water is 120 gallons (intercept). Drains 3 gallons per minute (negative slope). Equation: $W = -3t + 120$.
- 11) **Choice C is correct.** (8.F.B.5) From week 3 to 5, the price jumps from \$1 to \$4 in 2 weeks, a rate of \$1.50/week. All other segments are flat.
- 12) **Choice B is correct.** (8.G.A.2) Since the triangles are congruent, all corresponding sides and angles are equal. Both have a right angle and the same three side lengths.
- 13) **Choice D is correct.** (8.G.A.3) Original length: $\sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$. Dilated: $15 \times \frac{2}{3} = 10$.
- 14) **Choice B is correct.** (8.G.A.5) When parallel lines are cut by a transversal, corresponding angles, alternate interior angles, and alternate exterior angles are all congruent.
- 15) **Choice A is correct.** (8.G.C.9) $V = \frac{1}{3}\pi r^2 h = \frac{1}{3} \times 3.14 \times 9 \times 20 = \frac{1}{3} \times 565.2 = 188.4$ ft³.
- 16) **Choice C is correct.** (8.EE.A.1) Alternate interior angles are congruent when a transversal cuts parallel lines. So $t = 153^\circ$.
- 17) **Choice B is correct.** (8.G.C.9) Decompose: rectangle plus triangular roof. Rectangle area = $12 \times 8 = 96$ ft². Triangle area = $\frac{1}{2} \times 12 \times 4 = 24$ ft². Total area = $96 + 24 = 120$ ft².
- 18) **Choice B is correct.** (8.G.B.7) Using $\frac{(n-2) \times 180}{n} = 162$: $(n-2) \times 180 = 162n \Rightarrow 180n - 360 = 162n \Rightarrow 18n = 360 \Rightarrow n = 20$.
- 19) **Choice B is correct.** (8.SP.A.1) As speed increases, time to reach a destination decreases—a clear negative correlation. The other choices show positive or no clear correlation.
- 20) **The correct answer is 8.** (8.EE.A.2) $e^3 = 512$, so $e = \sqrt[3]{512} = 8$ feet.
- 21) **Choice B is correct.** (8.SP.A.4) This is a row-conditional relative frequency. Among cream-adders (50 total), 35 are office workers: $\frac{35}{50} = 0.70 = 70\%$.
- 22) **The correct answer is B,E.** (8.G.C.9) There are 10 marbles total. B is true because $P(\text{blue}) = \frac{3}{10}$. E is true because $P(\text{red or blue}) = \frac{5+3}{10} = \frac{8}{10} = \frac{4}{5}$. A is false because $P(\text{red}) = \frac{1}{2}$. C is false because $P(\text{green}) = \frac{1}{5}$. D is false because $P(\text{yellow}) = 0$.
- 23) **Choice C is correct.** (8.EE.A.1) $10^{-2} = \frac{1}{10^2} = \frac{1}{100} = 0.01$.
- 24) **The correct answer is $\frac{3}{2}$.** (8.EE.B.5) Three points: (0,0), (2,3), (4,6). Slope = $\frac{3}{2} = 1.5$.
- 25) **Choice A is correct.** (8.G.B.8) $d = \sqrt{2^2 + 3^2} = \sqrt{4 + 9} = \sqrt{13}$. Check: (B) $\sqrt{9+9} = \sqrt{18}$; (C) $\sqrt{4+4} = \sqrt{8}$; (D) $\sqrt{16+1} = \sqrt{17}$.
- 26) **Choice B is correct.** (8.G.C.9) $343 = \frac{1}{3} \times s^2 \times 7$, so $s^2 = 147$. Therefore $s = \sqrt{147} = 7\sqrt{3}$ cm.



You Are Building Test Stamina

Hi, Stamina Builder!

◇ This full-length book gave you ten complete Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 8 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

Your Test-Stamina Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **10** full-length Math practice tests and **2** online tests to help Grade 8 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.



THIS BOOK INCLUDES:

10

Full-Length
Printed Tests

2

Online
Practice Tests



Detailed Answers
& Explanations



**MORE PRACTICE.
GREATER RESULTS.**

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



**Build
Confidence**

Practice regularly to feel prepared and test-ready.



**Master
Key Skills**

Develop strong math skills and problem solving abilities.



**Improve
Understanding**

Learn with clear explanations and step-by-step solutions.



**Test
Strategies**

Learn proven strategies to approach every question with confidence.



**Boost
Performance**

Apply your knowledge and achieve your best score!

TOPICS COVERED

- | | |
|---------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Data Analysis |
| ✓ Inequalities | ✓ Measurement |
| ✓ Functions | ✓ Pythagorean Theorem |
| ✓ Geometry | ✓ Surface Area & Volume |
| ✓ Ratios & Proportions | ✓ And More! |



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY