

New Jersey

NJSLA

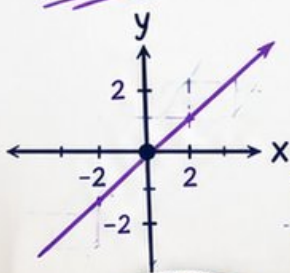
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

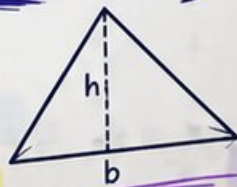
$$y = mx + b$$



**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 New Jersey NJSLA Grade 8 Math Practice Tests

NJSLA Math Practice for Grade 8 Problem Solving and Confidence



Seven 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.

Jay Daie and Reza Nazari



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Welcome, New Jersey Grade 8 Problem Solver!

Seven focused rounds for sharper NJSLA math thinking

This book gives you seven 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 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.

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?

Seven NJSLA 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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For more practice
& answers

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- 1) A table shows that when $x = 1$, $y = 7$ and when $x = 5$, $y = 23$. What is the slope?

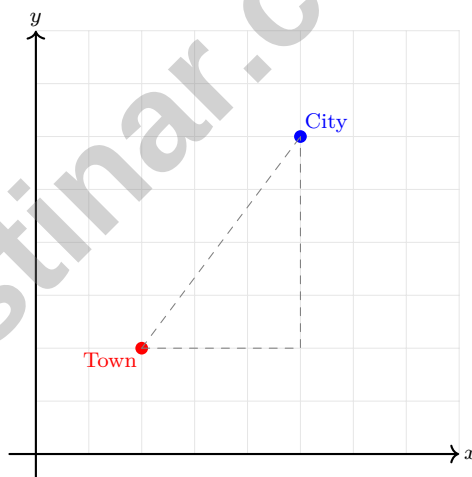
x	1	5
y	7	23

- ☐ A. 4
- ☐ B. 8
- ☐ C. $\frac{1}{4}$
- ☐ D. 16

2) $\frac{2.8 \times 10^7}{7 \times 10^4} = ?$

- ☐ A. 0.4×10^3
- ☐ B. 0.4×10^7
- ☐ C. 4×10^3
- ☐ D. 4×10^2

- 3) On a map, a town is located at (2, 2) and a city is located at (5, 6). If each grid unit represents 2 kilometers, what is the straight-line distance between the town and city?



- ☐ A. 5 km
- ☐ B. 10 km
- ☐ C. 20 km
- ☐ D. 2.5 km

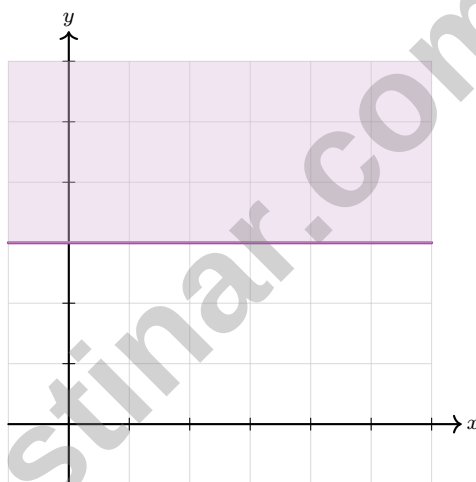


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4) A regular pentagon has all sides equal and all angles equal. What is the measure of each interior angle?

☐ A. 120° ☐ C. 72° ☐ B. 100° ☐ D. 108°

5) Pentagons $ABCDE$ and $FGHIJ$ are similar. Side $AB = 7$ cm and the corresponding side $FG = 14$ cm. If $BC = 9$ cm, what is the length of GH ?

☐ A. 4.5 cm☐ C. 9 cm☐ B. 18 cm☐ D. 11.5 cm

6)

Which inequality is represented?

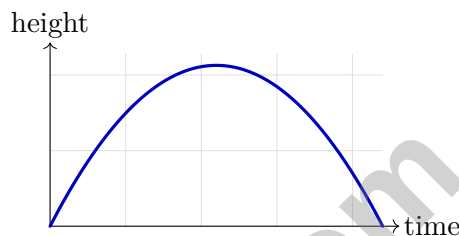
☐ A. $y \geq 3$ ☐ C. $y > 3$ ☐ B. $y \leq 3$ ☐ D. $y < 3$ 

7) The table below shows costs. Identify whether the relationship is linear.

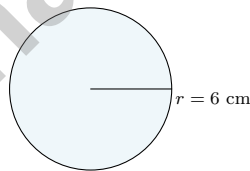
Quantity	1	2	3	4
Cost (\$)	12	24	36	48

- ☐ A. Yes, each item costs \$12 ☐ C. No, costs only go up
☐ B. No, the cost is too high ☐ D. Yes, because the total cost increases

8) Which graph matches: “A ball is thrown upward and falls back down”?



- ☐ A. A line going up and to the right ☐ C. A flat horizontal line
☐ B. A curve (parabola) that rises then falls ☐ D. A line going down and to the right



9)

A sphere has a radius of 6 cm. Approximately, what is its volume? Use $\pi \approx 3.14$.

- ☐ A. 226.08 cm^3 ☐ C. 904.32 cm^3
☐ B. 452.16 cm^3 ☐ D. 1130.4 cm^3



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1) Function f : “increases at 1.5 per unit, starts at 20.” Function g : “increases at 2 per unit, starts at 25.” Which function is larger at $t = 10$?

- ☐ A. Function f
☐ C. Both equal at $t = 10$
☐ B. Function g
☐ D. Cannot be determined.

2)

x	y
-2	7
0	3
2	-1
4	-5

Which equation represents the relationship shown in the table?

- ☐ A. $y = -2x + 3$
☐ C. $y = -x + 3$
☐ B. $y = 2x + 3$
☐ D. $y = 3x - 2$

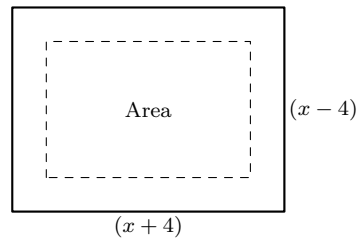
3) A runner trains at 6 miles per hour. Write the equation $d = kt$ for distance d (miles) and time t (hours). What is k ?

4) Solve for x : $4x + 9 = 4x + 2$

- ☐ A. $x = 7$
☐ C. Infinitely many solutions
☐ B. $x = -7$
☐ D. No solution



- 5) The area of a rectangle with dimensions $(x + 4)$ and $(x - 4)$ is shown below.



Which expression represents the area?

- ☐ A. $x^2 - 8$
☐ C. $x^2 - 16$
☐ B. $x^2 + 8x - 16$
☐ D. $2x - 16$
- 6) A line passes through $(0, 2)$ and $(4, 10)$. Find the slope.

- 7) The table shows a linear function. Find the missing y value.

x	1	2	3	4
y	7	11	?	19

- ☐ A. 13
 ☐ C. 14
☐ B. 15
 ☐ D. 16
- 8) $(4.0 \times 10^5) + (6.0 \times 10^4) = ?$
- ☐ A. 10×10^4
☐ C. 1.0×10^6
☐ B. 10×10^5
☐ D. 4.6×10^5



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- ☐ A. Spend it
- ☐ B. Invest at 6%
- ☐ C. Pay down debt at 12%
- ☐ D. Split equally among all three

- ☐ A. Marginal relative frequency (correct).
- ☐ B. Joint relative frequency.
- ☐ C. Row-conditional relative frequency.
- ☐ D. Column-conditional relative frequency.

- ☐ A. $\{10, 11, 10, 11, 10\}$ (tightly clustered)
 ☐ C. $\{5, 10, 2, 15, 1\}$ (very spread out)
- ☐ B. $\{1, 2, 3, 4, 5, 6\}$ (moderate spread)
 ☐ D. $\{1, 3, 5, 7, 9\}$ (evenly spaced)

- ☐ A. $9 + 4 = 13$
☐ C. $9 \times 4 = 36$
- ☐ B. $9 - 4 = 5$
☐ D. $\frac{9}{4} = 2.25$

5) Convert $0.9\overline{3}$ to a fraction in simplest form.

- ☐ A. $\frac{93}{100}$
☐ B. $\frac{9}{30}$

- ☐ C. $\frac{93}{99}$
☐ D. $\frac{84}{90} = \frac{14}{15}$

6) Which is closest to $\sqrt{40}$?

- ☐ A. 5
☐ B. 6

- ☐ C. 6.3
☐ D. 7

7) Between which integers does $\sqrt{99}$ lie?

- ☐ A. 8 and 9
☐ B. 7 and 8

- ☐ C. 10 and 11
☐ D. 9 and 10

8) Is the product $\sqrt{3} \times \sqrt{12}$ closer to 5 or 6?

- ☐ A. Closer to 5
☐ B. Exactly 7

- ☐ C. Exactly 5
☐ D. Closer to 6

9) Multiply $(2 \times 10^3) \times (3 \times 10^2)$. Express in scientific notation.

- ☐ A. 60×10^5
☐ B. 6×10^6

- ☐ C. 5×10^5
☐ D. 6×10^5

10) What is $\sqrt[3]{729}$?

- ☐ A. 8
☐ B. 11

- ☐ C. 10
☐ D. 9



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& answers

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 A is correct.** (8.F.B.4) Slope is $m = \frac{23-7}{5-1} = \frac{16}{4} = 4$.
- 2) **Choice D is correct.** (8.EE.A.4) Divide coefficients: $2.8 \div 7 = 0.4$. Subtract exponents: $10^{7-4} = 10^3$. Rewrite: $0.4 \times 10^3 = 4 \times 10^2$.
- 3) **Choice B is correct.** (8.G.B.8) Distance in units: $\sqrt{(5-2)^2 + (6-2)^2} = \sqrt{9+16} = 5$ units. In kilometers: $5 \times 2 = 10$ km.
- 4) **Choice D is correct.** (8.G.B.7) The sum for a pentagon is $(5-2) \times 180 = 540^\circ$. Each angle of a regular pentagon is $\frac{540}{5} = 108^\circ$.
- 5) **Choice B is correct.** (8.G.A.4) Scale factor is $\frac{14}{7} = 2$. So $GH = BC \times 2 = 9 \times 2 = 18$ cm.
- 6) **Choice A is correct.** (8.G.B.8) Solid horizontal line at $y = 3$ with shading ABOVE means $y \geq 3$.
- 7) **Choice A is correct.** (8.F.A.3) The first differences are constant: $24 - 12 = 12$, $36 - 24 = 12$, $48 - 36 = 12$. This represents a linear relationship where cost increases by \$12 per item.
- 8) **Choice B is correct.** (8.F.B.5) The height increases initially (upward throw) then decreases (falling back). A parabola captures this curved motion better than a straight line. Option A is a line, C is constant, and D is always decreasing.
- 9) **Choice C is correct.** (8.G.C.9) Volume of a sphere: $V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times 3.14 \times 6^3 = \frac{4}{3} \times 3.14 \times 216 = \frac{4}{3} \times 678.24 = 904.32$ cm³.
- 10) **Choice A is correct.** (8.SP.A.3) The slope is 75, meaning the account increases by \$75 each month.
- 11) **Choice A is correct.** (8.G.C.9) $P(\text{blue and blue}) = \frac{3}{6} \times \frac{3}{6} = \frac{9}{36}$.
- 12) **Choice A is correct.** (8.F.A.1) Option A has each input mapping to exactly one output. Option B has input 1 mapping to two outputs. Option C has input 5 mapping to two outputs. Option D has input 2 mapping to two outputs.
- 13) **The correct answer is $x = 3$.** (8.EE.C.7) Distribute the 3: $3x + 6 - 5 = x + 7$. Simplify: $3x + 1 = x + 7$. Subtract x from both sides: $2x + 1 = 7$. Subtract 1 from both sides: $2x = 6$. Divide by 2: $x = 3$. Verify: $3(3+2) - 5 = 3(5) - 5 = 15 - 5 = 10$ and $3 + 7 = 10$ ✓.
- 14) **The correct answer is $(5, 3)$.** (8.EE.C) Add the two equations to eliminate y : $(x + y) + (x - y) = 8 + 2$, so $2x = 10$, giving $x = 5$. Substitute into the first equation: $5 + y = 8$, so $y = 3$.
- 15) **Choice A is correct.** (8.G.A.3) Rotation rule: $(x, y) \rightarrow (-y, x)$. So $A(2, 1) \rightarrow A'(-1, 2)$.
- 16) **Choice A is correct.** (8.G.A.5) Co-interior angles (same-side interior angles) are supplementary: $124 + y = 180$, so $y = 56^\circ$.
- 17) **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).
- 18) **Choice A is correct.** (8.EE.A.1) Corresponding angles are congruent. So $r = 41^\circ$.
- 19) **Choice C is correct.** (8.G.C.9) $1200 = \frac{1}{3} \times B \times 10 \Rightarrow B = \frac{1200 \times 3}{10} = 360$ m².
- 20) **The correct answer is A,B.** (8.EE.B.6) Options A and B both have slope 4, making them parallel. Option C has slope -4 , option D has slope $\frac{1}{4}$, and option E has slope 2, so none of these match.
- 21) **Choice C is correct.** (8.G.C.9) Parallelogram = $10 \times 6 = 60$ m². Each triangle = $\frac{1}{2} \times 10 \times 2 = 10$ m². Two triangles = 20 m². Total = $60 + 20 = 80$ m².
- 22) **The correct answer is 55 units.** (8.EE.C.7) The inequality is $45 + x \geq 100$. Subtract 45: $x \geq 55$. The worker must complete at least 55 more units.
- 23) **Choice B is correct.** (8.SP.A.1) The downward trend shows negative correlation: as exercise increases, resting heart rate decreases. This is a typical physiological response.
- 24) **Choice D is correct.** (8.SP.A.4) Marginal relative frequency for takeout: $\frac{325}{500} = 0.65$.
- 25) **Choice B is correct.** (8.G.B.8) Expanded data: 4, 4, 8, 8, 8, 12, 12, 12, 12, 12. The mean is 9.2. Deviations: $|4 - 9.2| = 5.2$ (twice), $|8 - 9.2| = 1.2$ (three times), $|12 - 9.2| = 2.8$ (five times). Sum = $10.4 + 3.6 + 14 = 28$. MAD = $28/10 = 2.8$.
- 26) **Choice C is correct.** (8.NS.A.2) Arrange all 4 books in order: $4! = 4 \times 3 \times 2 \times 1 = 24$.



Hi, Strategy Solver!

◇ Grade 8 math rewards students who think before they calculate. You practiced choosing strategies, not just hunting for answers. This broad and demanding book gave you seven strong 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 **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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