

6 New Jersey NJSLA

GRADE 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving For
Comprehensive Assessment Programs



6 PRINTED
TESTS



2 ONLINE
TESTS



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

6 New Jersey NJSLA Grade 8 Math Practice Tests

Grade 8 Practice Built for Careful Reasoning and Complete Review



Six 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!

Six focused rounds for sharper NJSLA math thinking

This book gives you six 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 six-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?

Six NJSLA tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 4–6	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

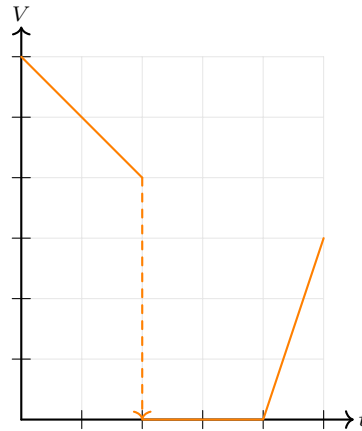
The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1)

A tank scenario: drains linearly $[0,2]$, pumped dry $[2,2]$, refills $[4,5]$. Identify the discontinuity.

- ☐ A. At $t = 2$ (vertical jump down from 4 to 0) ☐ C. At $t = 5$ (final value unclear)
☐ B. At $t = 4$ (gap in time) ☐ D. No discontinuities (function is continuous)

2) A scatter plot shows the number of hours a student studies versus their test score. The trend line has equation $y = 5x + 60$. If a student studies for 6 hours, what is the predicted test score?

3) If a is rational and b is irrational, which must be true?

- ☐ A. $a + b$ is rational ☐ C. $b - a$ is rational
☐ B. $a \times b$ is rational ☐ D. $a + b$ is irrational



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4) A rent-to-own contract charges \$600/month for 36 months on furniture worth \$12,000 cash. What is the finance charge?

☐ A. \$2,400

☐ C. \$9,600

☐ B. \$6,000

☐ D. \$21,600

5) The population of a country is 3.2×10^7 . What is this population in standard form?

☐ A. 3,200,000

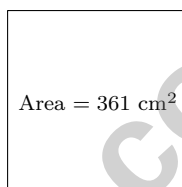
☐ C. 320,000,000

☐ B. 3,200,000,000

☐ D. 32,000,000

6) A square has an area of 361 square cm. What is its perimeter?

$s = ?$



$s = ?$

☐ A. 38 cm

☐ C. 76 cm

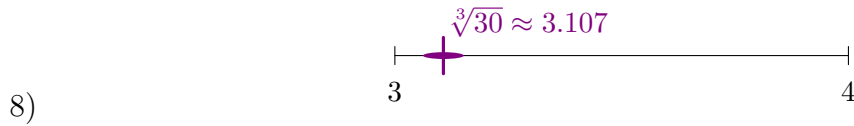
☐ B. 57 cm

☐ D. 152 cm

7) A jar contains 4 white tokens, 6 black tokens, and 5 red tokens. Two tokens are drawn without replacement. What is the probability that both tokens are black? Express your answer as a fraction in simplest form.



Cube values: $3^3 = 27$, $4^3 = 64$



Between which two consecutive integers does $\sqrt[3]{30}$ lie?

☐ A. 1 and 2

☐ C. 3 and 4

☐ B. 2 and 3

☐ D. 4 and 5

9) Which is the best estimate of $\sqrt{50}$?

☐ A. 5.0

☐ C. 7.1

☐ B. 6.5

☐ D. 8.9

10) Express 5^{-2} as a fraction.

☐ A. -25

☐ C. $\frac{2}{5}$

☐ B. $-\frac{1}{5}$

☐ D. $\frac{1}{25}$

11) A garden uses 3 gallons of water per crimson plant. After planting 12 crimson plants, how many gallons are needed?

☐ A. 24 gallons

☐ C. 36 gallons

☐ B. 30 gallons

☐ D. 40 gallons



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1) Factor $x^2 + 2x - 8$.

☐ A. $(x + 4)(x - 2)$

☐ C. $(x - 2)(x - 4)$

☐ B. $(x + 2)(x - 4)$

☐ D. $(x + 1)(x + 8)$

2) An angle is 12° less than three times its supplement. Write and solve an equation to find the angle's measure.

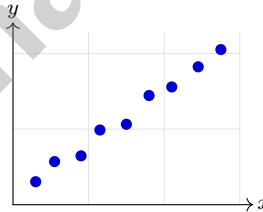
3) A model car is 12 cm long. The actual car is 4.8 m long. What is the scale factor from the model to the actual car?

☐ A. 40

☐ C. 0.4

☐ B. 4

☐ D. 0.25



4)

In a scatter plot of height versus shoe size, the relationship is best described as:

☐ A. Negative correlation (taller people wear smaller shoes)

☐ C. Weak positive correlation with many outliers

☐ B. No correlation between height and shoe size

☐ D. Strong positive correlation showing a clear trend



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- 5) A school newsletter reports that 250 students were surveyed about lunch preferences. The two-way table shows:

	Packed Lunch	School Lunch	Total
Elementary	60	65	125
Middle	55	70	125
Total	115	135	250

What is the marginal frequency for middle school students?

- ☐ A. 55 ☐ C. 115
☐ B. 70 ☐ D. 125

6)

Value	7	9	11	13
Deviation	?	1	1	?

The table shows values and their deviations from the mean. What is the MAD?

- ☐ A. 1.5 ☐ C. 2.5
☐ B. 2 ☐ D. 3

7)

	H	T
1	H1	T1
2	H2	T2

A coin is flipped and a spinner labeled 1, 2 is spun. What is the probability of getting an outcome where the coin is heads?

- ☐ A. $\frac{1}{4}$ ☐ C. $\frac{1}{3}$
☐ B. $\frac{1}{2}$ ☐ D. $\frac{3}{4}$



1) A die shows 6 faces numbered 1 through 6. What is the probability of rolling an even number?

- ☐ A. $\frac{1}{6}$
☐ B. $\frac{1}{2}$

- ☐ C. $\frac{2}{3}$
☐ D. $\frac{1}{3}$

2) A student starts with \$50 in a savings account and deposits \$10 each month. Which equation models the account balance B after m months?

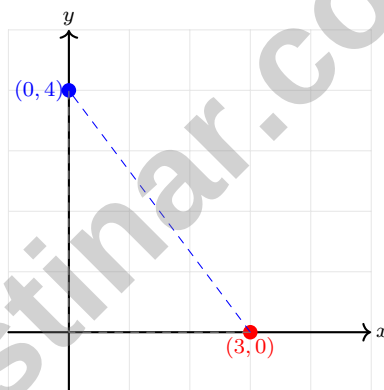
☐ A. $B = 10m + 50$

☐ C. $B = 60m$

☐ B. $B = 50m + 10$

☐ D. $B = 10m - 50$

3) A student is finding the distance between points $(3, 0)$ and $(0, 4)$ and writes: $d = 3 + 4 = 7$. What is the error?



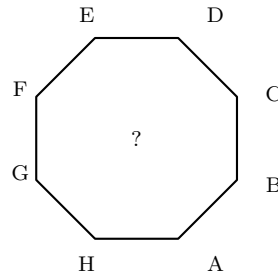
- ☐ A. They should square the differences before adding them.

- ☐ C. They forgot to take the square root.

- ☐ B. The answer is actually correct.

- ☐ D. They added instead of subtracting the coordinates.





4)

A regular octagon $ABCDEFGH$ is shown. Each interior angle measures:

☐ A. 120° ☐ C. 135° ☐ B. 125° ☐ D. 140°

5) A parallelogram has base 6 in and height 4 in. It is dilated by a scale factor of 2.5. What is the new height?

☐ A. 4 in☐ C. 15 in☐ B. 10 in☐ D. 6.5 in

6) A cone has the same radius and height as a cylinder. If the cylinder's volume is 450 cubic meters, what is the cone's volume?

☐ A. 150 m^3 ☐ C. 900 m^3 ☐ B. 225 m^3 ☐ D. 1350 m^3 

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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.5) The instant pump-dry event is shown with a dashed vertical jump from 4 to 0 at $t = 2$. This marks a discontinuity, not a gradual change over time.
- 2) **The correct answer is 90.** (8.SP.A.2) Substitute $x = 6$: $y = 5(6) + 60 = 30 + 60 = 90$.
- 3) **Choice D is correct.** (8.NS.A.1) The sum of a rational and an irrational number is always irrational. For example, $2 + \sqrt{3}$ is irrational. Similarly, $b - a$ is irrational, but products can vary.
- 4) **Choice C is correct.** (8.EE.B.5) Total paid: $600 \times 36 = \$21,600$. Finance charge: $21600 - 12000 = \$9,600$.
- 5) **Choice D is correct.** (8.EE.A.3) Move the decimal 7 places right: $3.2 \times 10^7 = 32,000,000$.
- 6) **Choice C is correct.** (8.EE.A.2) Area = 361, so $s = \sqrt{361} = 19$ cm. Perimeter = $4s = 4 \times 19 = 76$ cm.
- 7) **The correct answer is $\frac{1}{7}$.** (8.G.C.9) Total: 15 tokens. $P(\text{black first}) = \frac{6}{15}$; $P(\text{black second} \mid \text{black first}) = \frac{5}{14}$. Product: $\frac{6}{15} \times \frac{5}{14} = \frac{1}{7}$.
- 8) **Choice C is correct.** (8.NS.A.2) $3^3 = 27$ and $4^3 = 64$. Since $27 < 30 < 64$, we have $3 < \sqrt[3]{30} < 4$.
- 9) **Choice C is correct.** (8.NS.A.2) Since $7^2 = 49$ and $7.1^2 = 50.41$, we have $\sqrt{50} \approx 7.07$.
- 10) **Choice D is correct.** (8.EE.A.1) A negative exponent means reciprocal: $5^{-2} = \frac{1}{5^2} = \frac{1}{25}$.
- 11) **Choice C is correct.** (8.EE.B.5) Proportional relationship: $y = 3x$. For $x = 12$: $y = 3(12) = 36$ gallons.
- 12) **Choice B is correct.** (8.F.A.2) $S(0) = 500$. Table shows 600 at $m = 0$. Since $600 > 500$, table function starts higher.
- 13) **Choice B is correct.** (8.G.A.2) Equal perimeters do NOT guarantee congruence. Rectangle 1 is 18×12 cm, while Rectangle 2 is 20×10 cm. Congruence requires equal corresponding sides, not just equal perimeters.
- 14) **Choice A is correct.** (8.EE.B.5) Slope = $\frac{-4 - 2}{3 - (-3)} = \frac{-6}{6} = -1$.
- 15) **Choice C is correct.** (8.G.C) Boat A's effective upstream speed is $10 - 2 = 8$ mph. Boat B's effective downstream speed is $14 + 2 = 16$ mph. Their separation increases at $8 + 16 = 24$ mph, so $24t = 36$ and $t = 1.5$ hours.
- 16) **Choice C is correct.** (8.F.A.1) Find the output value 8 in the table; it corresponds to $x = 3$.
- 17) **Choice C is correct.** (8.G.C.9) Two triangular bases: $2 \times \frac{1}{2}(8)(3) = 24 \text{ cm}^2$. Perimeter of triangle: $8 + 5 + 5 = 18$ cm. Lateral area: $6 \times 18 = 108 \text{ cm}^2$. Total = $24 + 108 = 132 \text{ cm}^2$.
- 18) **The correct answer is A,C.** (8.G.A.4) Correct: (A) All linear measurements (sides, perimeter) are multiplied by 2.5. (C) Area is multiplied by $(2.5)^2 = 6.25$. Incorrect: (B) Angles are congruent in dilation, not scaled. (D) Perimeter is multiplied, not divided, by 2.5. (E) Dilation preserves shape; polygon type does not change.
- 19) **Choice B is correct.** (8.G.A.1) A 180° rotation about the origin maps $(x, y) \rightarrow (-x, -y)$. Distractor E is reflection across the x -axis.
- 20) **Choice B is correct.** (8.EE.B.6) The slope is the coefficient of x . Only option B has a negative coefficient: -3 .
- 21) **Choice A is correct.** (8.EE.C.7) Subtract 10: $-3x = -9$. Divide by -3 : $x = 3$. Check: $10 - 3(3) = 10 - 9 = 1$ ✓. (Distractor B: sign error when dividing; C: incorrect arithmetic.)
- 22) **Choice D is correct.** (8.EE.C.7) Set up: $150 + 25w > 500$. Subtract 150: $25w > 350$. Divide by 25: $w > 14$ weeks.
- 23) **The correct answer is 210.** (8.NS.A.2) First digit: 7 choices. Second digit: 6 remaining. Third digit: 5 remaining. Total: $7 \times 6 \times 5 = 210$.
- 24) **Choice B is correct.** (8.G.B.8) Check boundary: $-2(-1) + 1 = 2 + 1 = 3$. The point IS on $-2x + y = 3$. But for strict inequality $<$, the boundary is excluded, so $(-1, 1)$ is NOT in the solution.
- 25) **Choice C is correct.** (8.G.C.9) Radius $r = 12$ cm. $V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times 3.14 \times 1728 = 7234.56 \text{ cm}^3$.
- 26) **Choice A is correct.** (8.SP.A.3) Residual = actual - predicted = $7 - 7 = 0$. The model predicts perfectly for this point.
- 27) **Choice D is correct.** (8.EE.A.4) Same exponents: $(5.2 - 1.5) \times 10^6 = 3.7 \times 10^6$.
- 28) **Choice C is correct.** (8.EE.C) Simplify the first equation by dividing by 3: $x - 2y = 3$. Multiply the second by -1 : $x - 2y = 3$. They are the same equation, so infinitely many solutions.



Hi, Detail Champion!

◇ In Grade 8, small details can change an entire answer: a negative sign, a decimal place, a unit, an exponent, or an inequality symbol. ◇

★ **Remember this:** You practiced noticing those details. That is a serious test skill, and it gets better with every careful review. This version gave you 6 opportunities to rehearse test-day habits. ★

Detail Checks

- **Signs:** Circle negatives before simplifying.
- **Symbols:** Read inequality signs carefully.
- **Decimals:** Line up place values.
- **Units:** Match the unit the question asks for.

Grade 8 test-day tip: Use the final minute on each section for a detail scan, not a full redo.

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

Jay Daie

Your Detail-Check Coach

PRACTICE TODAY. ACHIEVE TOMORROW.

6

Give your child the confidence and skills they need with **6 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!

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.



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 |
| | ✓ And More! |



6 PRINTED TESTS



2 ONLINE TESTS



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