

9

Nevada

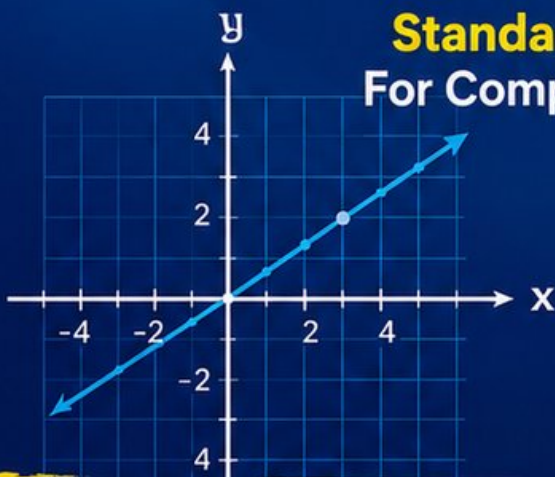
Smarter Balanced

Grade 8

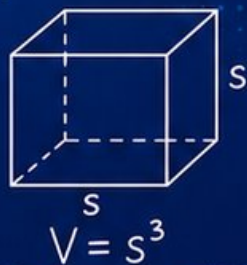
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



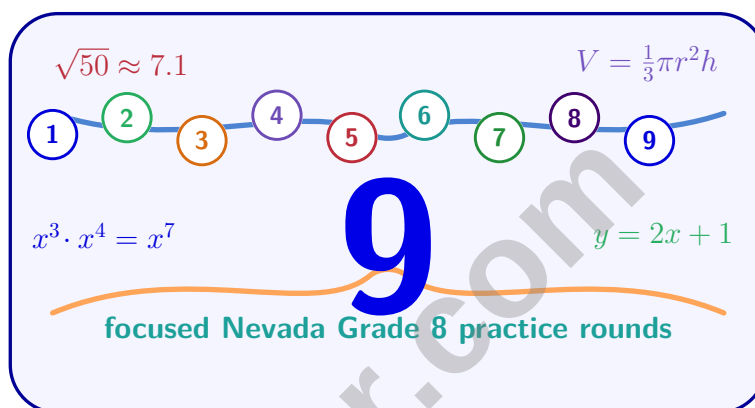
$$2x + 3y = 12$$
$$y = mx + b$$

**9** PRINTED
TESTS**2** ONLINE
TESTS

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

9 Nevada Smarter Balanced Grade 8 Math Practice Tests

Nevada Practice Rounds for Real Numbers, Functions, Geometry, and Data Fluency



Nine complete 40-question Grade 8 Smarter Balanced 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, Nevada Grade 8 Problem Solver!

Nine focused rounds for sharper Smarter Balanced math thinking

This book gives you nine full Grade 8 Smarter Balanced 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 Nevada 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 nine-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.

Nevada 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?

Nine Smarter Balanced tests, 360 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.
Tests 7–9	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.

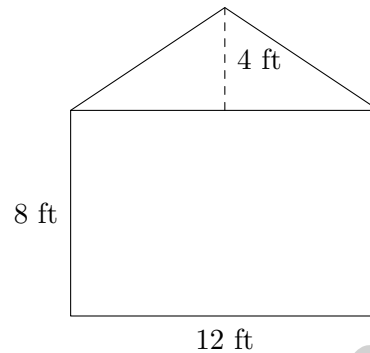


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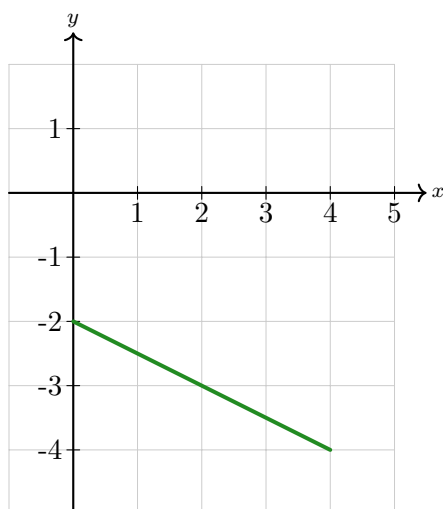
- 1) A composite figure consists of a rectangle with a triangular roof. The rectangle is 12 ft wide and 8 ft tall, and the triangle has the same base and a height of 4 ft. What is the area?



- ☐ A. 96 ft^2 ☐ C. 132 ft^2
☐ B. 120 ft^2 ☐ D. 144 ft^2
- 2) A point P is translated by the vector $(5, -2)$ to get point P' . If you want to undo this translation and return to P , which translation vector should you apply to P' ?
- ☐ A. $(5, -2)$ ☐ C. $(5, 2)$
☐ B. $(-5, 2)$ ☐ D. $(-5, -2)$



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3)

What is the equation of the line shown?

☐ A. $y = -\frac{1}{2}x - 2$

☐ C. $y = \frac{1}{2}x - 2$

☐ B. $y = -2x - 2$

☐ D. $y = 2x - 2$

4) Which is the best estimate of $2\sqrt{7}$?

☐ A. 3.5

☐ C. 7.0

☐ B. 14.0

☐ D. 5.2

5) Which expression cannot be simplified using exponent laws?

☐ A. $a^3 \cdot a^2$

☐ C. $a^3 + a^2$

☐ B. $\frac{a^3}{b^2}$

☐ D. $(c^2)^3$

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

7) A cube has a volume of 1000 cubic inches. What is the length of one edge?

☐ A. 9 inches

☐ C. 11 inches

☐ B. 12 inches

☐ D. 10 inches

8) Solve for y : $\frac{y}{2} + \frac{y}{3} = 10$

☐ A. $y = 10$

☐ C. $y = 15$

☐ B. $y = 20$

☐ D. $y = 12$

9) Solve by elimination:
$$\begin{cases} 2x + 3y = 11 \\ 2x - y = 3 \end{cases}$$

☐ A. (1, 3)

☐ C. (3, 1)

☐ B. $(2, \frac{7}{3})$

☐ D. $(\frac{5}{2}, 2)$

10) How many of $\sqrt{5}$, $\sqrt{6}$, and $\sqrt{7}$ are between 2 and 3?

11) Which inequality is equivalent to $-\frac{x}{4} < 2$?

☐ A. $x < -8$

☐ C. $x > -8$

☐ B. $x < 8$

☐ D. $x > 8$



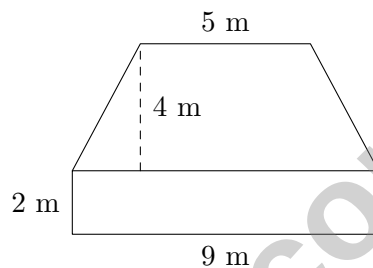
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- 1) A pyramid has a rectangular base with dimensions x meters by $3x$ meters and a height of 5 m. If the volume is 500 m^3 , what is the value of x ?

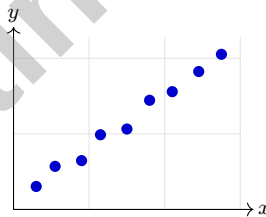
☐ A. 5 m ☐ C. 20 m
☐ B. 10 m ☐ D. 50 m

- 2) A composite figure has a trapezoid (parallel sides 5 m and 9 m, height 4 m) with a rectangle attached to the longer base (length 9 m, width 2 m). What is the total area?



☐ A. 28 m^2 ☐ C. 46 m^2
☐ B. 36 m^2 ☐ D. 56 m^2

3)



A scatter plot shows the relationship between hours slept and memory test score for 25 students. The points form a clear upward trend with only a few points far from the trend line. This indicates:

☐ A. Weak correlation ☐ C. Strong correlation
☐ B. Moderate correlation ☐ D. Perfect correlation

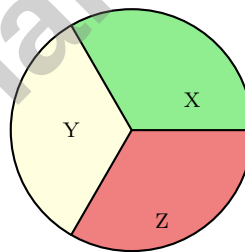


- 4) A two-way table of 480 products tracks quality and price point:

	Premium	Standard	Total
High Quality	240	80	320
Low Quality	48	112	160
Total	288	192	480

What joint relative frequency represents high-quality premium products?

- ☐ A. $\frac{240}{320} = 0.75$
☐ C. $\frac{240}{480} = 0.50$
- ☐ B. $\frac{240}{288} \approx 0.83$
☐ D. $\frac{320}{480} \approx 0.67$
- 5) A school is electing a president, vice-president, and treasurer from 9 candidates. How many ways can these positions be filled?
- ☐ A. $9 + 8 + 7 = 24$
☐ C. $\binom{9}{3} = 84$
- ☐ B. $9 \times 8 \times 7 = 504$
☐ D. $9^3 = 729$



6)

The spinner has three sections: X covers 120° , Y covers 120° , Z covers 120° . What is the probability of NOT landing on Y?

- ☐ A. $\frac{1}{2}$
☐ C. $\frac{1}{3}$
- ☐ B. $\frac{2}{3}$
☐ D. $\frac{1}{6}$

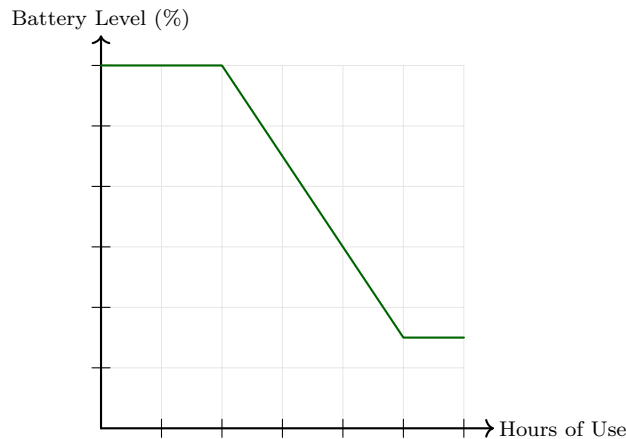


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- 1) In similar triangles, corresponding sides are in the ratio $\frac{3}{7}$. If the larger triangle has a side of 21 cm, find the corresponding side in the smaller triangle.
- ☐ A. 7 cm ☐ C. 15 cm
☐ B. 9 cm ☐ D. 28 cm
- 2) A cylindrical storage tank has a radius of 2.5 m and height of 4 m. What is the total surface area (including top and bottom)? Use $\pi \approx 3.14$.
- ☐ A. 62.8 m² ☐ C. 102.05 m²
☐ B. 82.25 m² ☐ D. 128.1 m²
- 3) The equation of a line of best fit for a scatter plot is $y = 1.5x + 20$. What does the slope of 1.5 represent?
- ☐ A. For every 1 unit increase in x , y increases by 1.5 units ☐ C. The starting value of y when $x = 0$
☐ B. For every 1 unit increase in x , y increases by 20 units ☐ D. For every 1 unit increase in x , y decreases by 1.5 units
- 4) What two positive integers multiply to 12 and add to 7?



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5)

A smartphone battery charges to 100%, remains fully charged during 2 hours of non-use, then drains steadily over 3 hours of active use. Which statement is true?

- ☐ A. The phone uses battery only during the first 2 hours
 ☐ C. The battery level is constant from 0 to 2 hours
☐ B. The battery drains faster during non-use
 ☐ D. The phone battery reaches 0% at 6 hours

6) Pentagon PQRST is congruent to pentagon UVWXY. If side $PQ = 8$ cm, what is the length of the corresponding side in the second pentagon?

- ☐ A. 4 cm ☐ C. 16 cm
☐ B. 8 cm ☐ D. Cannot be determined

7) Point $(1, 4)$ is reflected across the x -axis, then the image is reflected across the y -axis. What is the final image?

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



Nevada Smarter Balanced 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 Nevada Smarter Balanced practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (8.G.B.7) Decompose: rectangle plus triangular roof. Rectangle area = $12 \times 8 = 96 \text{ ft}^2$. Triangle area = $\frac{1}{2} \times 12 \times 4 = 24 \text{ ft}^2$. Total area = $96 + 24 = 120 \text{ ft}^2$.
- 2) **Choice B is correct.** (8.G.A.1) To undo a translation, apply the opposite (inverse) vector. If you moved by $(5, -2)$, move back by $(-5, 2)$. This is the additive inverse: $(5, -2) + (-5, 2) = (0, 0)$.
- 3) **Choice A is correct.** (8.EE.B.6) The y -intercept is -2 . Using $(4, -4)$: slope = $\frac{-4 - (-2)}{4 - 0} = \frac{-2}{4} = -\frac{1}{2}$.
- 4) **Choice D is correct.** (8.NS.A.2) $\sqrt{7} \approx 2.646$, so $2\sqrt{7} \approx 5.29$.
- 5) **Choice C is correct.** (8.EE.A.1) Addition/subtraction of powers requires like terms with same base AND exponent. $a^3 + a^2$ are not like terms.
- 6) **The correct answer is 0.00047.** (8.EE.A.3) Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 7) **Choice D is correct.** (8.EE.A.2) $e^3 = 1000$, so $e = \sqrt[3]{1000} = 10$ inches.
- 8) **Choice D is correct.** (8.EE.C.7) Find common denominator (6): $\frac{3y}{6} + \frac{2y}{6} = 10 \Rightarrow \frac{5y}{6} = 10$. Multiply by 6: $5y = 60$. Divide by 5: $y = 12$.
- 9) **Choice D is correct.** (8.EE.C.8a) Subtract the second from the first: $(2x + 3y) - (2x - y) = 11 - 3$, so $4y = 8$, giving $y = 2$. Substitute: $2x - 2 = 3$, so $2x = 5$ and $x = \frac{5}{2}$. Solution: $(\frac{5}{2}, 2)$.
- 10) **The correct answer is 3.** (8.NS.A.1) Each radicand is between 4 and 9, so each square root is between 2 and 3.
- 11) **Choice C is correct.** (8.EE.C.8b) Multiply by -4 (FLIP): $x > -8$.
- 12) **Choice A is correct.** (8.EE.C.7) FOIL: $(4x - 3)(x + 2) = 4x^2 + 8x - 3x - 6 = 4x^2 + 5x - 6$.
- 13) **Choice B is correct.** (8.EE.C.8b) A strict inequality, such as $<$, uses a dashed boundary line because points on the line are not included in the solution.
- 14) **Choice A is correct.** (8.F.A.2) β slope: $(6 - 12)/2 = -3$. Using $(0, 12)$: $\beta(x) = -3x + 12$. Same as α .
- 15) **Choice D is correct.** (8.G.A.2) Reflection is a rigid motion that preserves side lengths. The reflected rhombus has sides of 8 cm.
- 16) **Choice A is correct.** (8.G.A.3) The points $(0, 2) \rightarrow (0, -2)$ and $(2, 4) \rightarrow (2, -4)$. This is the reflection rule $(x, y) \rightarrow (x, -y)$.
- 17) **Choice B is correct.** (8.G.A.5) Sum: $(2m + 5) + (3m - 10) + (m + 35) = 180 \Rightarrow 6m + 30 = 180 \Rightarrow m = 25^\circ$. Thus angle $A = 2(25) + 5 = 55^\circ$.
- 18) **Choice A is correct.** (8.G.B.7) A: \$360 interest. B: \$450 interest. C: \$480 interest. D: \$450 interest. Option A has the lowest total cost.
- 19) **The correct answer is A, C.** (8.G.B.6, 8.G.B.7) A: $6^2 + 8^2 = 36 + 64 = 100 = 10^2$ ✓. C: $8^2 + 15^2 = 64 + 225 = 289 = 17^2$ ✓. B: $49 + 64 = 113 \neq 81$. D: $100 + 225 = 325 \neq 400$. E: $25 + 49 = 74 \neq 81$.
- 20) **The correct answer is $\frac{37}{300}$.** (8.NS.A.1) Set $x = 0.12\bar{3} = 0.12333\dots$. Then $100x = 12.\bar{3}$ and $1000x = 123.\bar{3}$. Subtracting: $900x = 111$, so $x = \frac{111}{900} = \frac{37}{300}$.
- 21) **Choice C is correct.** (8.EE.A.4) Multiply coefficients: $4.8 \times 1.25 = 6$. Add exponents: $10^{-2+2} = 10^0 = 1$. Result: $6 \times 10^0 = 6 \times 1 = 6$.
- 22) **Choice C is correct.** (8.EE.B.5) Proportional: $y = 15x$. For $x = 2.5$: $y = 15(2.5) = 37.5$ MB.
- 23) **Choice C is correct.** (8.F.A.1) A point has one x -value with one y -value, so it passes the vertical line test. A vertical line is not a function (fails VLT). Circles and ellipses fail the VLT.
- 24) **Choice C is correct.** (8.F.A.3) $y = 4x^{-1} = \frac{4}{x}$ is a reciprocal function (nonlinear). Options A, B, and D are all in the form $y = mx + b$.
- 25) **Choice B is correct.** (8.F.B.4) Equation: $C = 35h + 50$. Set $C = 225$: $225 = 35h + 50 \Rightarrow 175 = 35h \Rightarrow h = 5$ hours.
- 26) **Choice B is correct.** (8.F.B.5) Exponential decay starts steep and flattens, like fuel tank levels as the engine runs less frequently. A is linear, C is linear, D grows.
- 27) **Choice A is correct.** (8.G.B.8) Distance = $\sqrt{(4 - 1)^2 + (6 - 2)^2} = \sqrt{9 + 16} = \sqrt{25} = 5$.



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Hi, Thoughtful Reader!

◇ A strong Grade 8 test taker is also a strong reader. You practiced turning words, tables, graphs, and diagrams into math decisions. ◇

★ **Remember this:** That skill grows each time you slow down enough to ask what the problem is really telling you and what it is really asking for. This version gave you 9 opportunities to rehearse test-day habits. ★

Reader-to-Solver Skills

- **Circle the Ask:** Make the target visible.
- **Sort Information:** Separate useful facts from extra words.
- **Match Units:** Keep quantities connected.
- **Answer Fully:** Include the value and what it means.

Grade 8 test-day tip: After solving, reread only the final question. Make sure your answer matches it exactly.

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

Jay Daie

Your Reading-and-Math Helper

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

Help your child excel in math with **9 full-length Grade 8 practice tests** designed to reflect real test formats and cover all key math standards.

With a wide variety of questions and real-world applications, this book builds the skills and confidence students need to achieve their best!



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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Testinar

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