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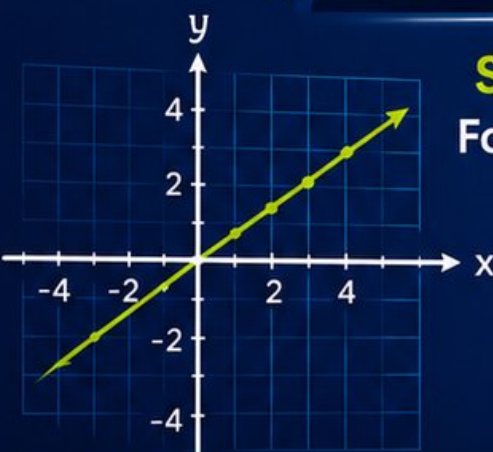
Wyoming WY TOPP

GRADE 8

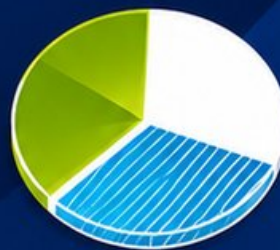
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



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



3 PRINTED
TESTS



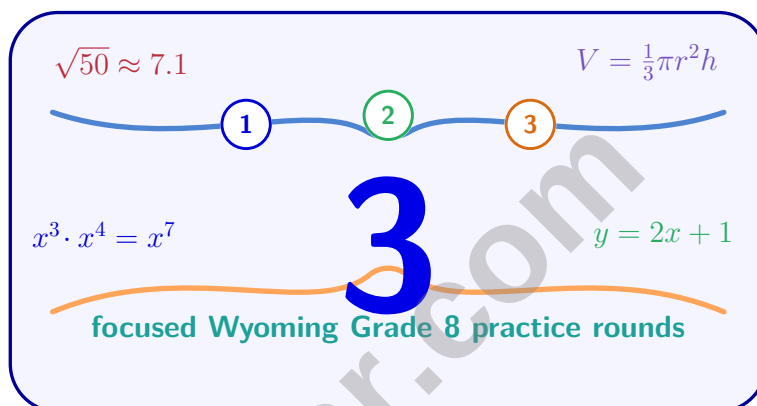
2 ONLINE
TESTS



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

3 Wyoming WY TOPP Grade 8 Math Practice Tests

Three WY TOPP Practice Tests for Targeted Grade 8 Review



Three complete 40-question Grade 8 WY TOPP 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, Wyoming Grade 8 Problem Solver!

Three focused rounds for sharper WY TOPP math thinking

This book gives you three full Grade 8 WY TOPP 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 Wyoming 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.

Wyoming 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 WY TOPP 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) To the nearest whole number, $\sqrt{30} \approx$?

☐ A. 7

☐ C. 4

☐ B. 6

☐ D. 5

2) A rectangular pyramid (not square) has a rectangular base with dimensions 5 m $\times$ 3 m. The slant heights are 8 m (for the pair of triangular faces on the longer base edges) and 7 m (for the pair on the shorter edges). What is the lateral surface area?

☐ A. $40 + 30 = 70 \text{ m}^2$

☐ C. 100 m^2

☐ B. $2 \times \frac{1}{2}(5)(8) + 2 \times \frac{1}{2}(3)(7) = 61 \text{ m}^2$

☐ D. 120 m^2

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

4) A figure is translated 6 units left and 3 units up. Which rule describes this translation?

☐ A. $(x, y) \rightarrow (x - 6, y + 3)$

☐ C. $(x, y) \rightarrow (x - 6, y - 3)$

☐ B. $(x, y) \rightarrow (x + 6, y - 3)$

☐ D. $(x, y) \rightarrow (x + 6, y + 3)$

5) Solve for x : $3(x - 4) = 2x + 5$

☐ A. $x = -7$

☐ C. $x = 17$

☐ B. $x = 7$

☐ D. $x = 9$



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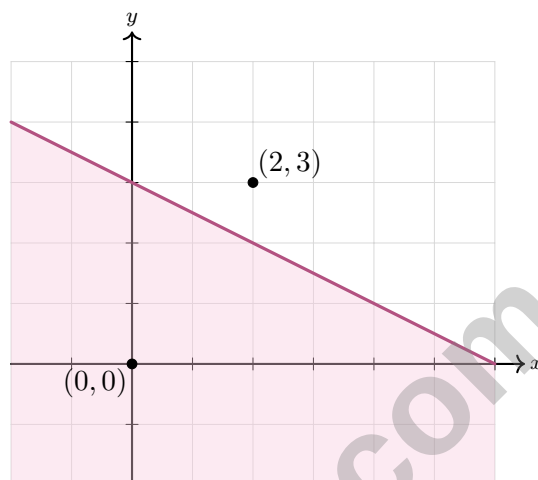
6) Solve: $7 - 4x \leq -5$

☐ A. $x \geq 3$

☐ C. $x \geq -3$

☐ B. $x \leq 3$

☐ D. $x \leq -3$



7)

The graph has a solid line with shading below. Two points are marked: $(0, 0)$ (in shaded region) and $(2, 3)$ (above the line). Which inequality is graphed?

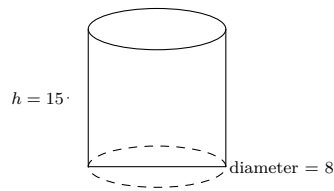
☐ A. $y < -\frac{1}{2}x + 3$ (forgot to flip when dividing by $-\frac{1}{2}$)

☐ C. $y \leq -\frac{1}{2}x + 3$ (correct)

☐ B. $y \geq -\frac{1}{2}x + 3$ (reversed shading AND boundary inclusion)

☐ D. $y > -\frac{1}{2}x + 3$ (solid line with shading above)





8)

A student needs to find the volume of a cylinder with diameter 8 in and height 15 in. Which formula setup is correct? (Use $\pi \approx 3.14$.)

☐ A. $V = 3.14 \times 8^2 \times 15$

☐ C. $V = 3.14 \times 8 \times 15$

☐ B. $V = 3.14 \times 4^2 \times 15$

☐ D. $V = \frac{1}{3} \times 3.14 \times 8^2 \times 15$

9) A clothing company models its revenue as $R = 45s - 200$, where R is revenue in dollars and s is the number of shirts sold. Below how many shirts is the company operating at a loss?

☐ A. Below 4 shirts☐ C. Below 44 shirts☐ B. Below 5 shirts☐ D. Below 200 shirts

10) What is the value of 8^0 ?

☐ A. 0☐ C. 8☐ B. Undefined☐ D. 1

11) Express $0.12\overline{3}$ as a fraction.

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1) When rolling two six-sided dice, what is the probability of rolling a sum of 7?

- ☐ A. $\frac{1}{5}$
☐ B. $\frac{1}{6}$

- ☐ C. $\frac{1}{12}$
☐ D. $\frac{7}{36}$

2) Convert $0.2\overline{7}$ to a fraction in simplest form.

- ☐ A. $\frac{27}{100}$
☐ B. $\frac{27}{99}$

- ☐ C. $\frac{27}{90}$
☐ D. $\frac{5}{18}$

3) Is π^2 greater than or less than $(3.1)^2$?

- ☐ A. Cannot be determined
☐ B. Less than $(3.1)^2$

- ☐ C. Exactly equal to $(3.1)^2$
☐ D. Greater than $(3.1)^2$

4) A credit card statement shows a beginning balance of \$500, new purchases of \$300, a payment of \$200, and interest of \$15. What is the ending balance?

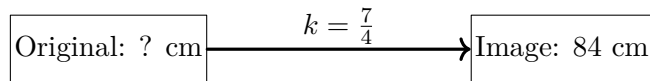
- ☐ A. \$500
☐ B. \$600

- ☐ C. \$615
☐ D. \$800

5) If $f(x) = \frac{x-1}{3}$ and $f(x) = 2$, find x .



- 6) A dilated figure has a perimeter of 84 cm. The scale factor used was $\frac{7}{4}$. What was the perimeter of the original figure?



- 7) A strand of DNA has width 2.0×10^{-9} m. Convert to standard form.
- ☐ A. 2,000,000,000 m ☐ C. 0.00000002 m
☐ B. 0.000000002 m ☐ D. 0.0000000002 m
- 8) A square pyramid has a base with side length 8 cm and height 3 cm. Approximate the slant height and then calculate the surface area. (Use $\sqrt{25} = 5$.)
- ☐ A. Slant height ≈ 5 cm, SA ≈ 129 cm² ☐ C. Slant height ≈ 4 cm, SA ≈ 113 cm²
☐ B. Slant height ≈ 5 cm, SA ≈ 144 cm² ☐ D. Slant height ≈ 6 cm, SA ≈ 161 cm²

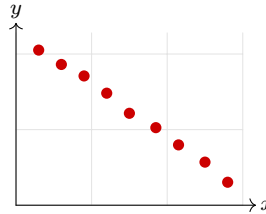


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1) The line $x + 2y = 8$ has slope:

☐ A. 1

☐ B. -1

☐ C. $-\frac{1}{2}$
☐ D. 2


2)

A scatter plot of monthly temperature (x) versus monthly heating costs (y) shows a strong negative relationship. Which statement correctly interprets this?

☐ A. Heating costs and temperature are unrelated

☐ B. Lower heating bills cause warmer weather

☐ C. Higher temperatures cause lower heating bills

☐ D. As temperature increases, heating costs tend to decrease

3) Triangle A has sides 5, 12, 13. Triangle B has sides 7.5, 18, 19.5. Triangle C has sides 10, 24, 26. Which triangles are similar to Triangle A ?

☐ A. Only Triangle B
☐ B. Only Triangle C
☐ C. Both Triangle B and C
☐ D. Neither Triangle B nor C

4) If $f(x) = |x - 2|$, what is $f(5)$?

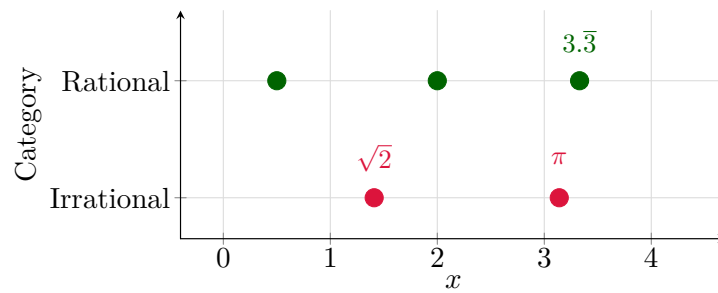
☐ A. 3

☐ B. -3

☐ C. 7

☐ D. -7


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& answers



5)

Which number should be plotted as irrational (height 0)?

☐ A. 0.5

☐ C. $3.\bar{3}$

☐ B. 2

☐ D. $\sqrt{5}$

6) Which equals $0.\overline{36}$?

☐ A. $\frac{36}{100} = \frac{9}{25}$

☐ C. $\frac{36}{90}$

☐ B. $\frac{6}{10}$

☐ D. $\frac{36}{99} = \frac{4}{11}$

7) The sum of two people's ages is 35. In 5 years, the older person will be twice the age of the younger person. If the younger person is currently y years old, find y .

8) Which is the best estimate of $\sqrt{99}$?

☐ A. 9.0

☐ C. 10.0

☐ B. 49.5

☐ D. 9.5



Wyoming WY TOPP 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 Wyoming WY TOPP practice test.



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& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- Choice D is correct.** **(8.NS.A.2)** $5^2 = 25$ and $6^2 = 36$. The midpoint is $(5.5)^2 = 30.25$. Since $30 < 30.25$, we have $\sqrt{30} < 5.5$, so it rounds to 5.
- Choice B is correct.** **(8.G.I.9)** Two triangular faces on the 5 m edges have total area $2 \times \frac{1}{2}(5)(8) = 40 \text{ m}^2$. Two triangular faces on the 3 m edges have total area $2 \times \frac{1}{2}(3)(7) = 21 \text{ m}^2$. Total lateral area is $40 + 21 = 61 \text{ m}^2$.
- The correct answer is 0.00047.** **(8.EE.B.4)** Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- Choice A is correct.** **(8.G.G.1)** Left = subtract from x ; up = add to y . The rule is $(x, y) \rightarrow (x - 6, y + 3)$. Distractor E reverses and swaps the direction values.
- Choice C is correct.** **(8.EE.D.7B)** 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.)
- Choice A is correct.** **(8.EE.D.7)** Subtract 7: $-4x \leq -12$. Divide by -4 (FLIP): $x \geq 3$.
- Choice C is correct.** **(8.EE.D.7)** SOLID boundary (includes line) + BELOW shading = $\leq$. Verify: $(0, 0)$ in shaded region: $0 \leq -\frac{1}{2}(0) + 3 = 3$ ✓ TRUE. Distractor A shows algebra error (forgot flip); B shows double error; D shows inverted shading.
- Choice B is correct.** **(8.EE.B.4)** The radius is half the diameter: $r = 8 \div 2 = 4$ in. Cylinder volume: $V = \pi r^2 h = 3.14 \times 4^2 \times 15$.
- Choice B is correct.** **(8.SP.J.3)** Break-even when $R = 0$: $0 = 45s - 200 \Rightarrow s = \frac{200}{45} \approx 4.44$. Loss occurs when $s < 4.44$, or below 5 shirts.
- Choice D is correct.** **(8.F.F.4)** Any nonzero number raised to the power 0 equals 1: $8^0 = 1$.
- 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 $x = \frac{111}{900} = \frac{37}{300}$.
- The correct answer is 4.9.** **(8.NS.A.2)** $\sqrt{6} \times \sqrt{4} = \sqrt{24} = 2\sqrt{6} \approx 2 \times 2.45 = 4.90$.
- Choice D is correct.** **(8.EE.B.2A)** $e^3 = 1000$, so $e = \sqrt[3]{1000} = 10$ inches.
- Choice D is correct.** **(8.EE.B.3)** First divide: $\frac{8 \times 10^9}{2 \times 10^3} = 4 \times 10^6$. Then divide again: $\frac{4 \times 10^6}{4 \times 10^2} = 1 \times 10^4$.
- Choice D is correct.** **(8.EE.C.6)** A line through the origin has y -intercept 0. With slope 3, the equation is $y = 3x + 0$ or $y = 3x$.
- Choice C is correct.** **(8.EE.D.7)** $(x - 7)^2 = (x - 7)(x - 7) = x^2 - 7x - 7x + 49 = x^2 - 14x + 49$.
- Choice B is correct.** **(8.F.E.2)** $I_X(12) = 0.8(12) = 9.60$ dollars. Slope of Y : $(10 - 0)/12 \approx 0.833$ per month, so $I_Y(12) = 10$ dollars. Since $10 > 9.60$, Account Y earns more.
- The correct answer is A, C.** **(8.NS.A.1)** Statement A is true because rational numbers are closed under addition. Statement C is true because any terminating decimal, such as $0.75 = \frac{3}{4}$, is rational. Statement B is false because two irrational numbers can multiply to a rational number, for example $\sqrt{2} \times \sqrt{8} = 4$. Statement D is false because integers are rational. Statement E is false because perfect squares have rational square roots, not irrational ones.
- Choice B is correct.** **(8.F.E.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.
- Choice A is correct.** **(8.F.F.4C)** y -intercept is 2 (at $x = 0$). Slope is $\frac{6-2}{4-0} = \frac{4}{4} = 1$.
- Choice A is correct.** **(8.F.F.5)** Cumulative rainfall never decreases. A steep jump indicates heavy rainfall over a short time; a flat section means zero rainfall. B would show a gradual, constant increase (not steep). C would be a small jump then flat. D is impossible for cumulative data.
- Choice C is correct.** **(8.G.G.2)** Rotation is a rigid motion, so it preserves all distances and angles. The rotated figure is congruent to the original.
- Choice A is correct.** **(8.G.G.3)** A dilation by scale factor k maps $(x, y) \rightarrow (kx, ky)$. With $k = \frac{1}{2}$: $(8, -6) \rightarrow (4, -3)$.
- Choice A is correct.** **(8.G.H.6, 8.G.H.7)** From $15^2 + 20^2 = 225 + 400 = 625$, we get $c = 25$. The difference is $25 - 15 = 10$ (scaled 3-4-5 triple).
- Choice C is correct.** **(8.G.H.7)** The supplement of an angle is found by subtracting from 180° : $180 - 29 = 151^\circ$.



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!

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PRACTICE. PREPARE. SUCCEED.



Testinar

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