

8

Wyoming

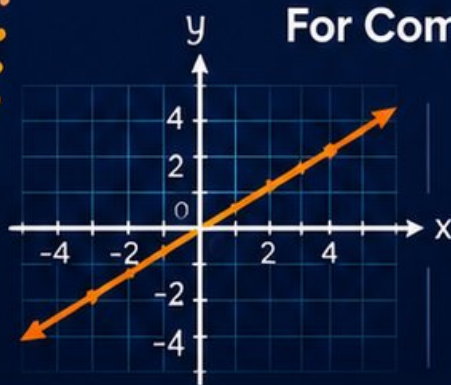
WY TOPP

GRADE 8

MATH

PRACTICE TESTS

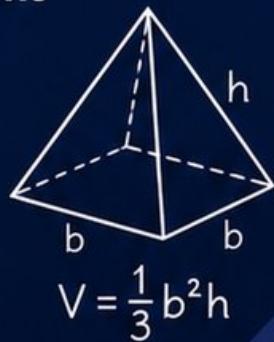
Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$A = \pi r^2$$

$$C = 2\pi r$$

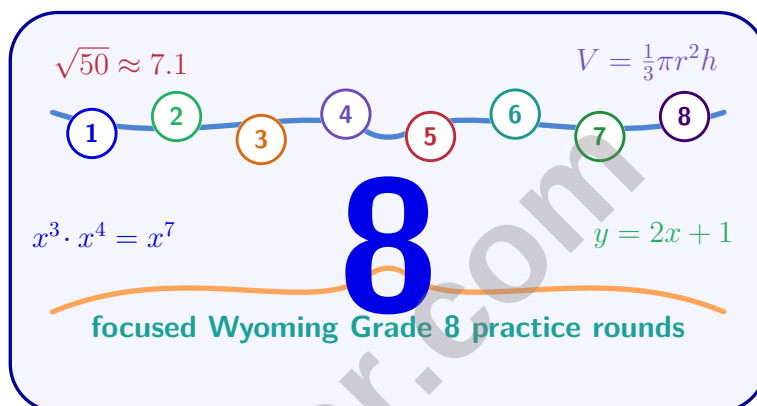
$$V = \frac{1}{3}\pi r^2 h$$

**8** PRINTED TESTS**2** ONLINE TESTS

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

8 Wyoming WY TOPP Grade 8 Math Practice Tests

Wyoming Grade 8 Practice for Functions, Geometry, Data, and Models



Eight 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!

Eight focused rounds for sharper WY TOPP math thinking

This book gives you eight 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

An eight-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?

Eight WY TOPP tests, 320 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 7–8	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
Answer Pages	Compact keys and explanations that show why each answer works.

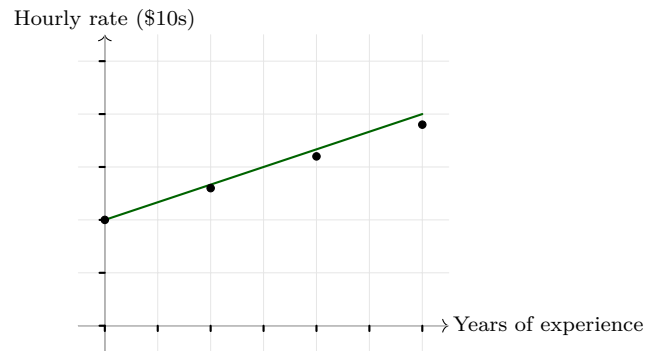
The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



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For more practice
& answers

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1)

A fitness trainer's hourly rate increases with years of experience: $R = 20 + 3x$, where R is hourly rate in dollars and x is years of experience. What is the rate for someone with 6 years of experience?

☐ A. \$32☐ C. \$38☐ B. \$50☐ D. \$60

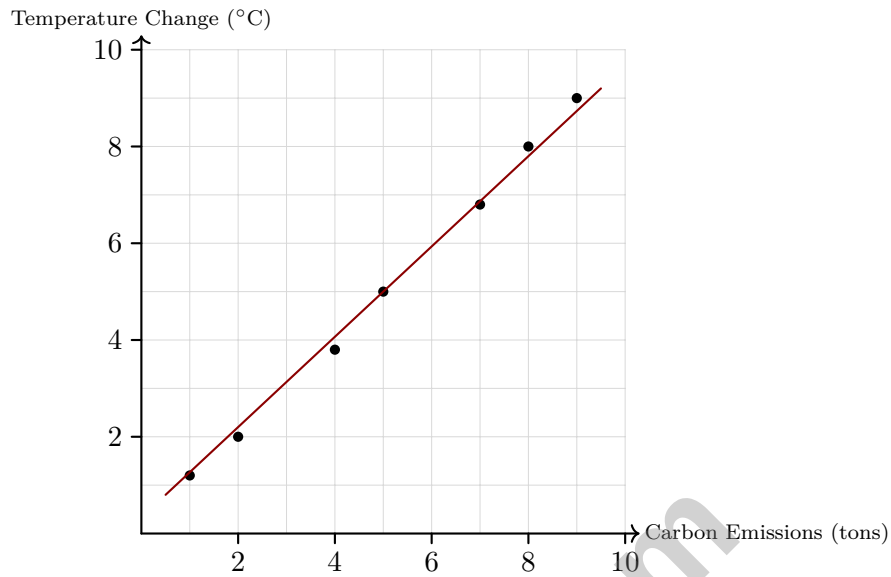
2)

Test Scores	88	92	90	86	94
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Five students scored as shown. The mean is 90. Calculate the MAD.

☐ A. 2☐ C. 2.4☐ B. 3☐ D. 4

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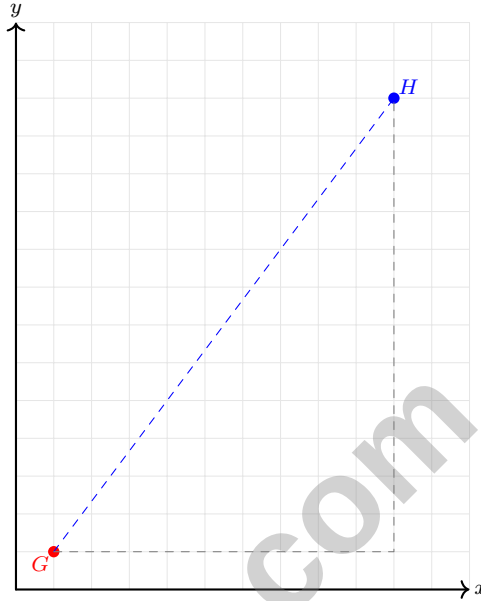
3)

A scientist studies the relationship between carbon emissions and temperature change. The trend line shows a strong positive relationship. Which is the best interpretation?

- ☐ A. As carbon emissions increase, temperature tends to increase on average
- ☐ B. Temperature change has no relationship to emissions
- ☐ C. Higher temperatures cause carbon emissions
- ☐ D. The relationship is random



- 4) Points are plotted at $G = (1, 1)$ and $H = (10, 13)$. What is the distance between G and H rounded to the nearest whole number?



- ☐ A. 12 ☐ C. 21
☐ B. 15 ☐ D. 18
- 5) Three angles are formed on a straight line. Their measures are x , $2x$, and $3x$. Find x .
- ☐ A. 30° ☐ C. 60°
☐ B. 45° ☐ D. 90°
- 6) A restaurant tracks 300 orders by meal type and customer type. Of 180 dine-in orders, 108 are from regular customers. What is the relative frequency of orders from regular customers among dine-in meals, as a decimal?
- ☐ A. 0.36 ☐ C. 0.54
☐ B. 0.45 ☐ D. 0.60



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1) Solve: $4x - 9 \leq 3x + 1$

☐ A. $x \leq 10$

☐ C. $x \leq -10$

☐ B. $x \geq 10$

☐ D. $x \geq -10$

2) A bank offers two savings accounts: Account M at 4% simple interest, and Account N at 2% compound interest annually. After 3 years on an initial deposit of \$1,000, which is better?

☐ A. Cannot determine

☐ C. They are equal

☐ B. Account N (compound)

☐ D. Account M (simple)

3) Which table represents a LINEAR function?

x	1	2	3	4
y	3	7	11	15

☐ A. Yes, the first differences are constant

☐ C. Yes, all y -values are positive

☐ B. No, the y -values are not all even

☐ D. No, the x -values increase

4) In a triangle, two angles measure 45° and 75° . What is the measure of the third angle?

☐ A. 30°

☐ C. 90°

☐ B. 60°

☐ D. 120°

5) A baker tracks daily bread sales: $\{40, 45, 50, 55, 60\}$ loaves. Mean = 50. What is the MAD?

☐ A. 5

☐ C. 6

☐ B. 8

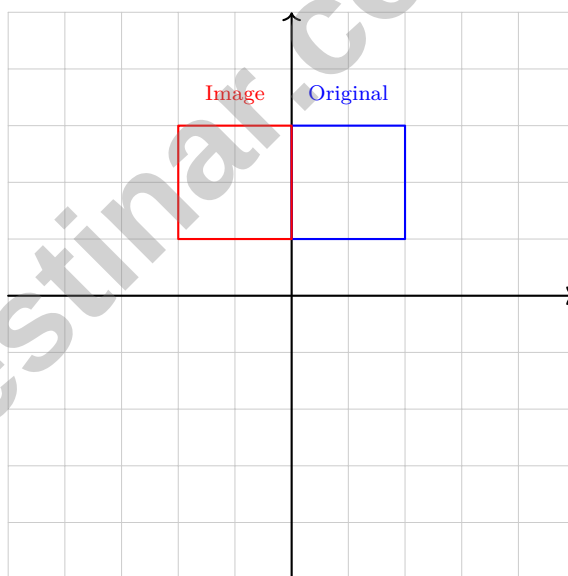
☐ D. 10



6) When the correlation between two variables is weak, the trend line:

- ☐ A. Has a slope of zero
☐ B. Should not be used at all
☐ C. Will have large residuals and less reliable predictions
☐ D. Will be very accurate for predictions

7) A chemist combines a 25% salt solution with an 80% salt solution to make 100 mL of a 50% solution. How many mL of the 25% solution are used?



8)

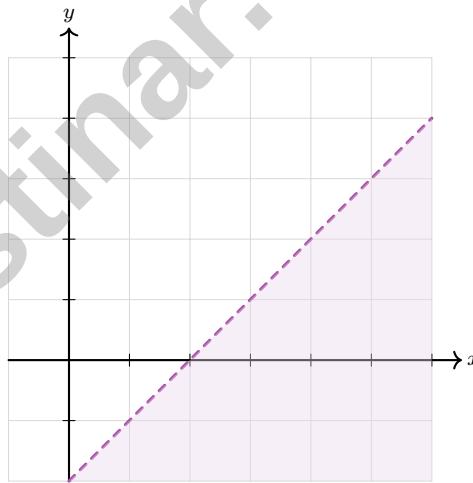
What single transformation maps the blue figure to the red figure?

- ☐ A. Reflection across the line $x = 0$ (the y -axis)
☐ B. Translation 3 units left
☐ C. Rotation 180° about $(1, 2)$
☐ D. Dilation with center $(0, 2)$ and scale factor 2



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& answers

- 1) Under a reflection across the line $y = x$, the point $(4, 7)$ maps to which point?
- ☐ A. $(7, 4)$ ☐ C. $(4, -7)$
☐ B. $(-4, -7)$ ☐ D. $(-7, -4)$
- 2) A college savings plan earns 7% compound interest annually. If \$5,000 is invested for 10 years, approximately how much will be accumulated?
- ☐ A. \$8,500 ☐ C. \$11,500
☐ B. \$13,800 ☐ D. \$9,835
- 3) A line in slope-intercept form is $y = mx + b$. If the slope is $-\frac{3}{4}$ and the line passes through $(4, -3)$, what is b ?
- ☐ A. 0 ☐ C. -6
☐ B. 3 ☐ D. 6



4)

The dashed line and shading below show:

- ☐ A. $y > x - 2$ ☐ C. $y \geq x - 2$
☐ B. $y < x - 2$ ☐ D. $y \leq x - 2$



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- 5) Water level in two tanks: Tank A : $L_A(t) = 50 - 3t$ liters. Tank B in table: $(0, 40)$, $(5, 20)$, $(10, 0)$. Which empties faster?

t	0	5	10
$L_B(t)$	40	20	0

- ☐ A. Tank A empties faster ☐ C. Same rate
☐ B. Tank B empties faster ☐ D. Cannot determine



6)

Identify the intervals where the function is increasing.

- ☐ A. From $x = 1$ to $x = 3$ only ☐ C. From $x = 1$ to $x = 3$ and from $x = 3$ to $x = 5$
☐ B. From $x = -1$ to $x = 1$ ☐ D. From $x = -1$ to $x = 3$
- 7) What is the sum of the interior angles of an octagon?

- ☐ A. 1350° ☐ C. 1260°
☐ B. 900° ☐ D. 1080°



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.

**Scan me!**For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (8.SP.J.3) Substitute $x = 6$: $R = 20 + 3(6) = 20 + 18 = \38 .
- 2) **Choice C is correct.** (8.G.H.8) Absolute deviations: $|88 - 90| = 2$, $|92 - 90| = 2$, $|90 - 90| = 0$, $|86 - 90| = 4$, $|94 - 90| = 4$. Sum = 12. MAD = $12/5 = 2.4$.
- 3) **Choice A is correct.** (8.SP.J.2) The positive slope shows association: higher emissions correspond to higher temperatures on average.
- 4) **Choice B is correct.** (8.G.H.8) $d = \sqrt{(10 - 1)^2 + (13 - 1)^2} = \sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$.
- 5) **Choice A is correct.** (8.G.H.7) Angles on a straight line sum to 180° . So $x + 2x + 3x = 180$, which gives $6x = 180$ and $x = 30^\circ$.
- 6) **Choice D is correct.** (8.SP.J.4) Relative frequency among dine-in orders: $\frac{108}{180} = 0.60$. This is a row-conditional frequency.
- 7) **Choice D is correct.** (8.EE.B.4) $5 \times 4 \times 3 = 60$ different combinations.
- 8) **Choice C is correct.** (8.NS.A.1C) Choose 1st (5 choices), then 2nd (4 remaining), then 3rd (3 remaining): $5 \times 4 \times 3 = 60$.
- 9) **Choice D is correct.** (8.NS.A.2) $\sqrt{2} \times \sqrt{8} = \sqrt{16} = 4$ exactly. Perfect pair product.
- 10) **Choice C is correct.** (8.NS.A.1) $\sqrt{4} = 2$ (rational), $0.\bar{5} = \frac{5}{9}$ (rational), and $-2.5 = -\frac{5}{2}$ (rational). The irrational numbers are π and $\sqrt{11}$ (non-perfect square).
- 11) **Choice D is correct.** (8.NS.A.1) Let $x = 0.\overline{27}$. Then $100x = 27.\overline{27}$. Subtracting: $99x = 27$, so $x = \frac{27}{99} = \frac{3}{11}$.
- 12) **Choice D is correct.** (8.NS.A.2) $4.35^2 = 18.9225$ and $4.36^2 = 19.0096$. Since 19 is closer to 19.0096, $\sqrt{19} \approx 4.36$.
- 13) **Choice D is correct.** (8.EE.B.2A) $s = \sqrt{200} = \sqrt{100 \times 2} = 10\sqrt{2} \approx 14.14$ meters.
- 14) **The correct answer is -2 .** (8.F.F.4C) A descent means the rate of change is negative, so the slope is -2 .
- 15) **The correct answer is $(3, -5)$.** (8.G.G.2) A reflection across the x -axis changes the sign of the y -coordinate while keeping the x -coordinate the same. Thus, $(3, 5)$ maps to $(3, -5)$.
- 16) **Choice C is correct.** (8.EE.B.4) In scientific notation, the coefficient must be at least 1 and less than 10. Only 1.23×10^5 satisfies this.
- 17) **The correct answer is 6.** (8.G.G.3) Reflections preserve length. The original segment GH has length $|8 - 2| = 6$, so $G'H'$ also has length 6.
- 18) **Choice C is correct.** (8.EE.B.3) Divide coefficients: $5 \div 2.5 = 2$. Subtract exponents: $10^{-2 - (-5)} = 10^3$. Result: 2×10^3 .
- 19) **The correct answer is A, C.** (8.F.E.3) A: $y = 6x - 2$ has the form $y = mx + b$ (linear). C: $y = -x + 9$ is also in the form $y = mx + b$ (linear). B has a cubic term, D has a reciprocal, and E has a square root, making B, D, and E nonlinear.
- 20) **Choice D is correct.** (8.EE.C.6) Using $y = mx + b$ where m is slope and b is y -intercept: $y = 4x + 6$.
- 21) **Choice A is correct.** (8.EE.D.7B) Subtract $2x$ and 7: $2x = 12$. Divide by 2: $x = 6$.
- 22) **Choice A is correct.** (8.EE.D.7) Set up: $12 + 3t < 30$. Subtract 12: $3t < 18$. Divide by 3: $t < 6$ hours.
- 23) **Choice C is correct.** (8.EE.D.7) Rearrange: $y > -2x + 6$. Strict inequality ($>$) $\rightarrow$ DASHED boundary. Since y is GREATER than the expression, shade ABOVE. Distractor A mistakes dashed for solid; B flips both inequality and shading; D has wrong slope.
- 24) **Choice B is correct.** (8.F.F.5) A zero of f is a value of x where $f(x) = 0$. This is exactly where the graph crosses the x -axis (x -intercept). Same point, same concept, two names.
- 25) **Choice D is correct.** (8.G.G.5) The sum of exterior angles is always 360° . If each exterior angle is 24° , then $n = \frac{360}{24} = 15$.
- 26) **Choice D is correct.** (8.F.F.4) Simplify the numerator first: $(w^4)^3 = w^{12}$ (power of a power), then apply quotient rule.
- 27) **Choice C is correct.** (8.EE.C.5) Unit rate $k = \frac{110}{2} = 55$ miles per hour. The proportional equation is $d = 55t$.



The Power of Showing Work

Hi, Organized Solver!

◇ You practiced Grade 8 skills that often require more than one step. That means your written work matters. ◇

★ **Remember this:** Showing work is not extra. It is how you track your thinking, find errors, and prove that your answer did not happen by luck. You practiced across 8 full Grade 8 practice tests, and that repeated effort matters. ★

Organized Work Habits

- **One Line Per Step:** Keep the path readable.
- **Box the Answer:** Make the final result easy to find.
- **Use Labels:** Tell what each value represents.
- **Check the Path:** Follow your steps backward if needed.

Grade 8 test-day tip: When a problem has several steps, write less on each line. Space makes checking easier.

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

Jay Daie

Your Organized-Work Coach

PRACTICE TODAY, SUCCEED TOMORROW!

Give your child the confidence and skills they need with **8 full-length Grade 8** Math practice tests that mirror 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.



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!



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Better Results.