

10

Wyoming

WY TOPP

GRADE

8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

10

PRINTED
TESTS



2

ONLINE
TESTS



Build Confidence



Master Key Math Skills

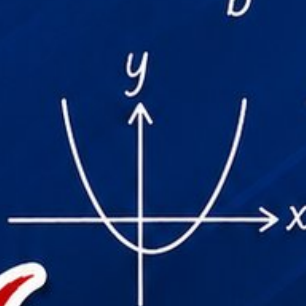
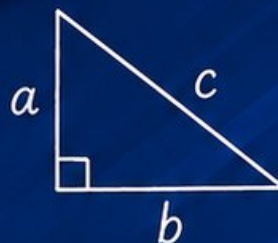


Answer Explanations for
Every Question



Test-Taking Strategies
That Work

$$y = mx + b$$



$$3x - 7 = 2(x + 5)$$
$$x = 17$$

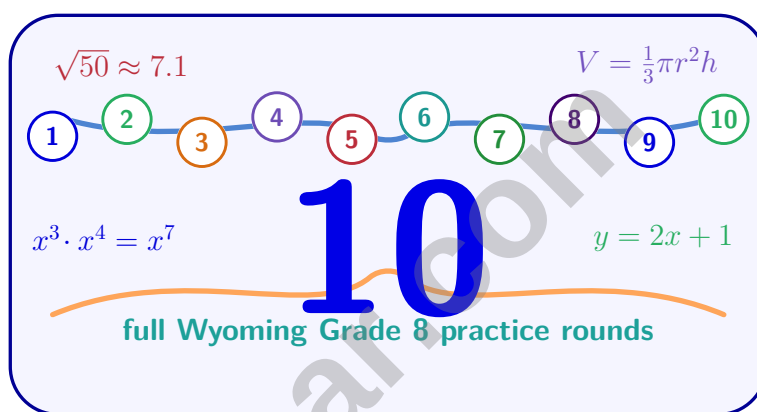


USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

10 Wyoming WY TOPP Grade 8 Math Practice Tests

Wyoming Grade 8 WY TOPP Practice for open-range review of proportional models, rational operations, equations, geometry, data, and probability



Ten complete 40-question Grade 8 WY TOPP practice rounds with linear relationships, scientific notation, real numbers, equations, functions, 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!

Ten focused rounds for sharper Wyoming WY TOPP math thinking

This book gives you ten full Grade 8 WY TOPP math practice tests. Each round is built to help you notice structure, compare quantities, use linear reasoning, handle real numbers, and explain your thinking with care.

Grade 8 standards focus: This page supports **Volume of Cylinders, Cones, and Spheres** (8.EE.B.4): Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. You will also meet **Solving Systems of Two Equations** (8.EE.D.8A): Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs. Solve systems algebraically and by graphing.

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 ten-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 a proportion, equation, diagram, number line, 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.

Grade 8 standards focus: Keep the routine connected to **Using a Linear Model** (8.SP.J.3): Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting slope and intercept. A second useful connection is **Linear vs. Nonlinear Functions** (8.F.E.3): Interpret $y = mx + b$ as defining a linear function. Give examples of functions that are not linear.

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?

Ten Wyoming WY TOPP tests, 400 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Linear relationships, integer exponents, scientific notation, real-number reasoning, and careful reading.
Tests 4–6	Expressions, equations, inequalities, transformations, geometry, and multi-step problem solving.
Tests 7–9	Data analysis, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final Wyoming round to show growth across the whole book.
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.

Grade 8 standards focus: Use these habits while practicing **Solving Linear Inequalities** (8.EE.D.7): Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations. It also prepares you for **Transformations on the Coordinate Plane** (8.G.G.3): Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

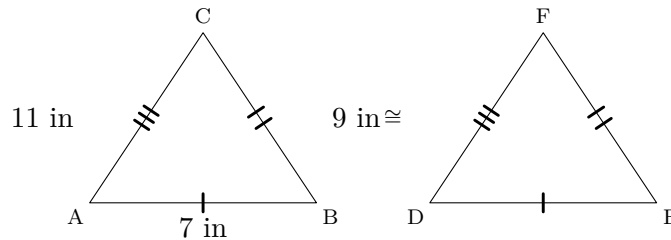


Scan me!
For more practice
& answers

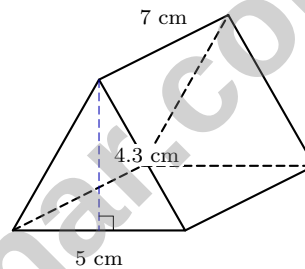
Table of Contents

★ Practice Test 1	15
★ Practice Test 2	31
★ Practice Test 3	50
★ Practice Test 4	68
★ Practice Test 5	85
★ Practice Test 6	100
★ Practice Test 7	117
★ Practice Test 8	134
★ Practice Test 9	150
★ Practice Test 10	168
Practice Test Answer Keys	184
Practice Test Answers and Explanations	190

- 1) Triangle ABC is congruent to triangle DEF. In triangle ABC: $AB = 7$ in, $BC = 9$ in, $AC = 11$ in. In triangle DEF, which side corresponds to side AC?



- ☐ A. Side DE
☐ D. Cannot be determined from the diagram
☐ B. Side EF
☐ C. Side DF



2)

A triangular prism has equilateral triangular bases with side length 5 cm (height ≈ 4.3 cm) and depth 7 cm. What is the approximate total surface area?

- ☐ A. 21.5 cm^2
☐ C. 126.5 cm^2
☐ B. 43 cm^2
☐ D. 172.5 cm^2
- 3) A cone has the same radius and height as a cylinder whose volume is 720 cubic inches. What is the cone's volume?

- ☐ A. 120 in^3
☐ C. 480 in^3
☐ B. 240 in^3
☐ D. 720 in^3



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& answers

4) A car's fuel consumption model is $M = -0.05d + 35$, where M is miles per gallon and d is driving distance in hundreds of miles. What does the slope of -0.05 tell you?

- ☐ A. The car uses 0.05 gallons per mile ☐ C. For every 100 miles driven (1 unit of d), MPG decreases by 0.05
☐ B. The car starts with 35 gallons at $d = 0$ ☐ D. The car loses 0.05 MPG for every gallon used

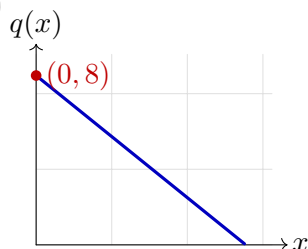
5) A line passes through $(0, 7)$ and $(3, 1)$. What is the slope?

- ☐ A. 2 ☐ C. 3
☐ B. -3 ☐ D. -2

6) Factor $x^2 - x - 20$.

- ☐ A. $(x - 5)(x + 4)$ ☐ C. $(x - 10)(x + 2)$
☐ B. $(x + 5)(x - 4)$ ☐ D. $(x - 20)(x + 1)$

7) Two linear functions: $p(x) = -x + 10$ (verbal: "starts at 10, decreases by 1 each step"). Function q shown in graph through $(0, 8)$ with slope -1.5 . Which has more negative slope?



- ☐ A. Function p ☐ C. Equal negative slopes
☐ B. Function q ☐ D. Not comparable



8) Which equation is NONLINEAR?

☐ A. $y = \frac{5}{2}x - \frac{3}{4}$

☐ C. $y = 4x^{-1}$

☐ B. $y = 10 + 0.5x$

☐ D. $y = -8x + 11$

9) A snowpile melts at a rate of 4 inches per day. If it starts at 60 inches, which equation models the height h after d days?

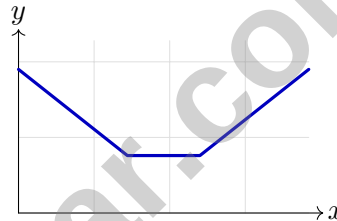
☐ A. $h = 60d - 4$

☐ C. $h = 4d + 60$

☐ B. $h = -4d + 60$

☐ D. $h = 60 - d$

10) An elevator moves: down for 10 seconds, stops for 5 seconds, up for 8 seconds. Sketch the height-vs.-time graph. Which shape describes it?


☐ A. Three straight segments: decreasing, flat, increasing

☐ C. One increasing line across all time

☐ D. A parabola opening upward

☐ B. One decreasing line across all time

11) A student borrows \$1,500 for college at 4% simple interest and repays over 10 years. What is the total amount owed?



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1) What is the slope of a line passing through the points (1, 2) and (3, 8)?

☐ A. 2

☐ C. $\frac{1}{3}$

☐ B. -2

☐ D. 3

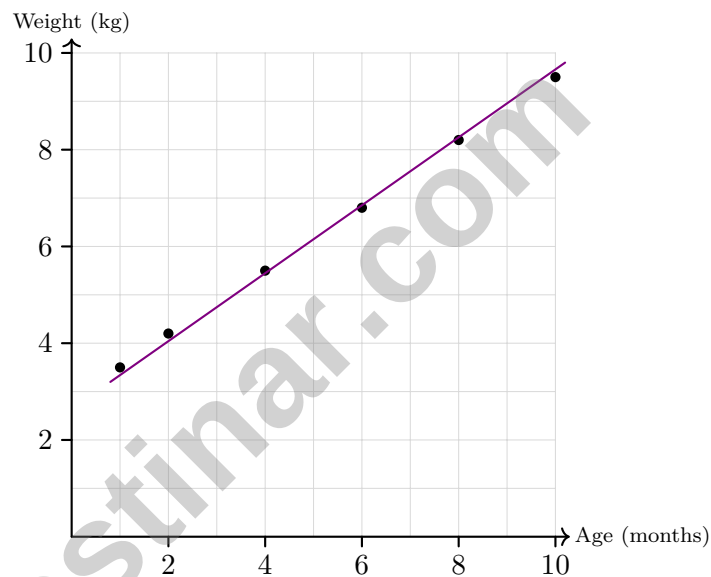
2) If $f(x) = x - 3$ and $f(x) = 5$, what is x ?

☐ A. 2

☐ C. 5

☐ B. 8

☐ D. 15



3)

An infant growth chart plots age in months versus weight in kg. If the trend line is $y = 0.65x + 2.5$, how much weight gain is predicted per month?

☐ A. 0.65 kg per month

☐ C. 2.5 kg per month

☐ B. 0.50 kg per month

☐ D. 3.15 kg per month



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4) A segment from $(2, 1)$ to $(4, 3)$ is dilated by scale factor 2 from the point $(2, 1)$. Where does $(4, 3)$ map to?

☐ A. $(6, 5)$ ☐ C. $(8, 6)$ ☐ B. $(4, 3)$ ☐ D. $(2, 1)$

5) If r is a nonzero rational number and i is an irrational number, which expression is definitely rational?

☐ A. $r + i$ ☐ C. $\frac{r}{r}$ (where $r \neq 0$)☐ B. $r \times i$ ☐ D. $i - r$

6) What is $0.\overline{3}$ as a fraction?

☐ A. $\frac{1}{10}$ ☐ C. $\frac{3}{99}$ ☐ B. $\frac{3}{10}$ ☐ D. $\frac{3}{9} = \frac{1}{3}$

7) Which is the best estimate of $\sqrt{18}$?

☐ A. 3.0☐ C. 4.2☐ B. 4.0☐ D. 9.0

8) A gift of \$2,000 is offered in two ways: receive \$200 cash now or invest it at 8% simple interest for 1 year. Which choice results in more money after 1 year?

☐ A. Cannot determine without more information☐ C. Both result in the same amount☐ B. Invest at 8% for 1 year; total will be \$2,160☐ D. Receive \$200 cash now; total will be \$2,200

1) Is $y = x^2$ a function?

- ☐ A. No, because it has an exponent. ☐ C. Yes, because every real number input produces exactly one output.
- ☐ B. No, because negative inputs produce positive outputs. ☐ D. Yes, only when x is positive.

2) Solve:
$$\begin{cases} 5x - 2y = 4 \\ 2x + y = 7 \end{cases}$$

- ☐ A. (1, 2) ☐ C. (1.2, 1)
- ☐ B. (2, 1) ☐ D. (2, 3)

3) Which equation represents a proportional relationship?

- ☐ A. $y = 2x + 3$ ☐ C. $y = x - 1$
- ☐ B. $y = \frac{1}{2}x + 2$ ☐ D. $y = -5x$

4) A line has a slope of $-\frac{1}{2}$ and passes through (4, 6). What is the y -coordinate when $x = 8$?

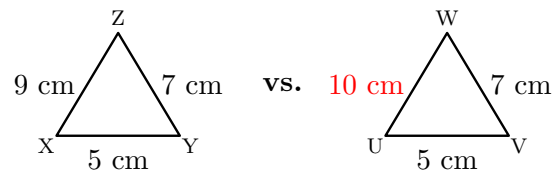
- ☐ A. 4 ☐ C. 6
- ☐ B. 8 ☐ D. 2

5) A father is currently 32 years older than his son. In 8 years, the father will be twice as old as the son. What is the son's current age?

- ☐ A. 16 ☐ C. 24
- ☐ B. 20 ☐ D. 28



- 6) Triangle XYZ is congruent to triangle UVW. The sides of triangle XYZ are 5 cm, 7 cm, and 9 cm. A student claims triangle UVW must have sides 5 cm, 7 cm, and 10 cm. Why is the student incorrect?



- ☐ A. Congruent triangles have equal corresponding sides
- ☐ B. UVW must have sides 7, 5, 9 in a different order
- ☐ C. The side lengths don't need to match
- ☐ D. The student counted incorrectly
- 7) In $y = x^2 - 5$, what is the exponent on x ?



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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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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (8.G.G.2) Side $AC = 11$ in is the longest side in triangle ABC . In congruent triangle DEF , side DF must be the longest side (11 in), so AC corresponds to DF .
- 2) **Choice C is correct.** (8.G.I.9) Two equilateral triangle bases: $2 \times \frac{1}{2}(5)(4.3) = 21.5 \text{ cm}^2$. Three rectangular sides: $3 \times (5 \times 7) = 105 \text{ cm}^2$. Total $\approx 21.5 + 105 = 126.5 \text{ cm}^2$.
- 3) **Choice B is correct.** (8.EE.B.4) Since $V_{\text{cone}} = \frac{1}{3}V_{\text{cyl}}$, the cone's volume is $\frac{1}{3} \times 720 = 240 \text{ in}^3$.
- 4) **Choice C is correct.** (8.SP.J.3) The slope -0.05 is the rate of change in M per unit increase in d . Since d is measured in hundreds of miles, each 100-mile interval causes MPG to drop by 0.05.
- 5) **Choice D is correct.** (8.EE.C.6) Slope $= \frac{1-7}{3-0} = \frac{-6}{3} = -2$.
- 6) **Choice A is correct.** (8.EE.D.7) Find two numbers that multiply to -20 and add to -1 : -5 and 4 . Check: $-5 \cdot 4 = -20$ and $-5 + 4 = -1$.
- 7) **Choice B is correct.** (8.F.E.2) Slope of p : -1 . Slope of q : -1.5 . Since $-1.5 < -1$, function q is more negative.
- 8) **Choice C is correct.** (8.F.E.3) $y = 4x^{-1} = \frac{4}{x}$ is a reciprocal function (nonlinear). Options A, B, and D are all in the form $y = mx + b$.
- 9) **Choice B is correct.** (8.F.F.4C) Initial height is 60 inches (intercept). Melts (decreases) at 4 inches per day (negative slope). Equation: $h = -4d + 60$.
- 10) **Choice A is correct.** (8.F.F.5) The elevator goes down (negative slope), pauses (flat line), then up (positive slope). This is a piecewise linear function with three distinct segments.
- 11) **The correct answer is \$1,800.** (8.EE.B.4) Interest: $I = 1500 \times 0.04 \times 10 = \600 . Total: $1500 + 600 = \$1,800$.
- 12) **Choice A is correct.** (8.G.G.3) Reflecting across the x -axis maps $(0, 1) \rightarrow (0, -1)$ and $(2, 2) \rightarrow (2, -2)$. Translating left 4 gives $(-4, -1)$ and $(-2, -2)$, matching the image rectangle.
- 13) **Choice A is correct.** (8.G.H.6, 8.G.H.7) From $(\sqrt{18})^2 + (\sqrt{7})^2 = c^2$, we get $18 + 7 = 25$, so $c = \sqrt{25} = 5$.
- 14) **Choice C is correct.** (8.G.H.7) Let the smaller angle be x . Then $x + (x + 12) = 90 \Rightarrow 2x + 12 = 90 \Rightarrow 2x = 78 \Rightarrow x = 39^\circ$. The larger angle is $39 + 12 = 51^\circ$.
- 15) **Choice B is correct.** (8.G.I.9) $192 = \frac{1}{3} \times 64 \times h \Rightarrow h = \frac{192 \times 3}{64} = \frac{576}{64} = 9 \text{ cm}$.
- 16) **Choice B is correct.** (8.G.I.9) Decompose: rectangle and semicircle. Rectangle area $= 10 \times 4 = 40 \text{ ft}^2$. Semicircle has diameter 4 ft, so radius $r = 2$ ft. Semicircle area $= \frac{1}{2}\pi r^2 = \frac{1}{2} \times 3.14 \times 2^2 = 6.28 \text{ ft}^2$. Total $= 40 + 6.28 = 46.28 \text{ ft}^2$.
- 17) **The correct answer is 0.125.** (8.F.F.4) $2^{-3} = \frac{1}{2^3} = \frac{1}{8} = 0.125$.
- 18) **The correct answer is A, C.** (8.EE.B.4) A is correct: $P(\text{heads}) = \frac{1}{2}$. C is correct: $P(\text{heads and 4}) = \frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$. B is wrong: $P(4) = \frac{1}{6}$. D is wrong: total outcomes $= 12$. E is wrong: $P(\text{not heads}) = \frac{1}{2}$.
- 19) **Choice C is correct.** (8.G.G.5) Each interior angle of a regular hexagon is $\frac{(6-2) \times 180}{6} = \frac{720}{6} = 120^\circ$.
- 20) **Choice B is correct.** (8.SP.J.1) The downward trend shows negative correlation: as exercise increases, resting heart rate decreases. This is a typical physiological response.
- 21) **Choice C is correct.** (8.SP.J.4) Row-conditional frequency: among HR (row total 120), remote workers are 35. Denominator is the row total, not column or grand total.
- 22) **Choice D is correct.** (8.EE.C.5) Slope $= \frac{6}{5} = 1.2$. The line passes through $(0, 0)$ and $(5, 6)$.
- 23) **Choice D is correct.** (8.EE.D.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: $(\frac{5}{2}, 2)$.
- 24) **Choice A is correct.** (8.F.E.1) Each input $(1, 2, 3)$ maps to exactly one output (A, B, C) . The fact that outputs are letters instead of numbers is irrelevant.
- 25) **Choice A is correct.** (8.G.G.5) Angles x and y are alternate interior angles formed by parallel lines and a transversal, so they are congruent: $y = 84^\circ$.
- 26) **The correct answer is 7.** (8.EE.B.2A) $\sqrt[3]{343} = 7$ because $7 \times 7 \times 7 = 343$.



You Are Building Test Stamina

Hi, Stamina Builder!

◇ This full-length book gave you ten complete Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 8 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

Your Test-Stamina Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **10** full-length Math practice tests and **2** online tests to help Grade 8 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.



THIS BOOK INCLUDES:

10

Full-Length
Printed Tests

2

Online
Practice Tests



Detailed Answers
& Explanations



**MORE PRACTICE.
GREATER RESULTS.**

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



**Build
Confidence**

Practice regularly to feel prepared and test-ready.



**Master
Key Skills**

Develop strong math skills and problem solving abilities.



**Improve
Understanding**

Learn with clear explanations and step-by-step solutions.



**Test
Strategies**

Learn proven strategies to approach every question with confidence.



**Boost
Performance**

Apply your knowledge and achieve your best score!

TOPICS COVERED

- | | |
|---------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Data Analysis |
| ✓ Inequalities | ✓ Measurement |
| ✓ Functions | ✓ Pythagorean Theorem |
| ✓ Geometry | ✓ Surface Area & Volume |
| ✓ Ratios & Proportions | ✓ And More! |



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY