

6 Wyoming WY TOPP

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 Wyoming WY TOPP Grade 8 Math Practice Tests

Grade 8 Standards Practice for Functions, Geometry, Data, and Review



Six 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



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Wyoming Grade 8 Problem Solver!

Six focused rounds for sharper WY TOPP math thinking

This book gives you six 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 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.

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?

Six WY TOPP 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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	30
★ Practice Test 3	_____	46
★ Practice Test 4	_____	61
★ Practice Test 5	_____	78
★ Practice Test 6	_____	93
Practice Test Answer Keys	_____	110
Practice Test Answers and Explanations	_____	114

1) A sphere has a radius of 3 inches. What is its volume in cubic inches? (Use $\pi \approx 3.14$.)

☐ A. 56.52 in^3

☐ C. 169.56 in^3

☐ B. 113.04 in^3

☐ D. 339.12 in^3

2) The decimal expansion of a rational number is:

☐ A. Always irrational

☐ C. Always non-terminating

☐ B. Cannot be written as a fraction

☐ D. Either terminating or repeating

3) Which set contains only irrational numbers?

☐ A. $\{1, 2, 3\}$

☐ C. $\{\sqrt{2}, 3, \sqrt{5}\}$

☐ B. $\{\sqrt{4}, \sqrt{9}, \sqrt{16}\}$

☐ D. $\{\sqrt{2}, \sqrt{3}, \sqrt{5}\}$

4) Which statement is FALSE?

☐ A. $\pi \approx 3.14$

☐ C. $\sqrt{50} \approx 5.0$

☐ B. $\sqrt{2} \approx 1.4$

☐ D. $\sqrt{15} \approx 3.9$

5) Which pair of expressions is equivalent?

Expression 1	Expression 2
A.	$x^2 \cdot x^3$ and x^6
B.	$(x^3)^2$ and x^5
C.	$\frac{x^6}{x^2}$ and x^4
D.	$x^4 + x^2$ and x^6

☐ A. Option A

☐ C. Option C

☐ B. Option B

☐ D. Option D


Scan me!

For more practice
& answers

+ -

.....

17

.....

× ÷

Testinar.com

- 6) A square picture frame has an area of 169 square inches. What is the length of one side of the frame?

☐ A. 12 inches☐ C. 14 inches☐ B. 15 inches☐ D. 13 inches

- 7) Two trend-line slopes are 1.2 and 1.1. What is their difference?

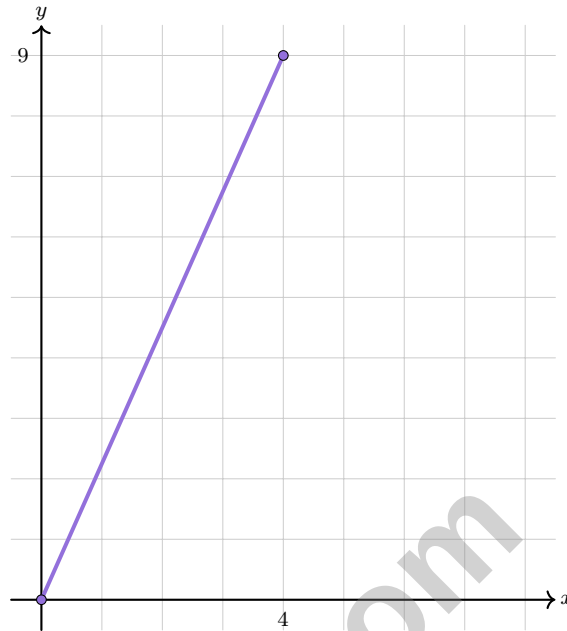
- 8) Express 0.0072 in scientific notation.

☐ A. 0.72×10^{-2} ☐ C. 7.2×10^{-4} ☐ B. 7.2×10^3 ☐ D. 7.2×10^{-3}

- 9) Two fair coins are flipped. What is the probability of getting exactly one heads? Write your answer as a fraction.

- 10) $(1.5 \times 10^{-3}) \times (2.4 \times 10^{-2}) = ?$

☐ A. 0.36×10^{-5} ☐ C. 3.6×10^{-5} ☐ B. 3.9×10^{-5} ☐ D. 3.6×10^{-6} 



11)

The ratio $y : x$ is:

☐ A. $4 : 9$

☐ C. $1 : 2.25$

☐ B. $0.44 : 1$

☐ D. $9 : 4$

12) Which system represents two lines that intersect at exactly one point?

☐ A. $x = 2$ and $x = 2$

☐ C. $y = x + 1$ and $y = x + 3$

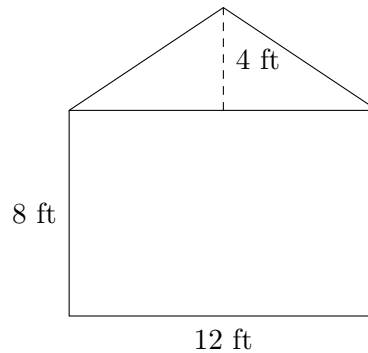
☐ B. $y = 4$ and $y = 4$

☐ D. $y = 2x + 1$ and $y = -x + 7$



Scan me!
For more practice
& answers

- 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 ft² ☐ C. 132 ft²
☐ B. 120 ft² ☐ D. 144 ft²
- 2) A right triangle has a hypotenuse of 13 units and one leg of 5 units. Find the length of the other leg.

- 3) Triangle with vertices at (1, 0), (3, 0), and (2, 2) is dilated by a scale factor of 0.5 from the origin. What is the area ratio of the new triangle to the original?

- ☐ A. 0.5 ☐ C. 2
☐ B. 0.25 ☐ D. 4



- 4) Two parallel lines are cut by a transversal. One angle measures 73° . Write and solve an equation to find the measure of its co-interior angle.

- 5) The table below shows preferences for sports among 100 students.

	Football	Basketball	Total
Boys	35	20	55
Girls	15	30	45
Total	50	50	100

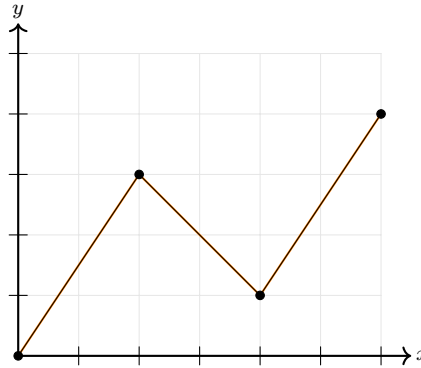
How many boys prefer basketball?

- ☐ A. 15
- ☐ B. 20
- ☐ C. 35
- ☐ D. 50
- 6) Consider the data: $\{3, 6, 9, 12\}$ (mean = 7.5). What is the MAD?
- ☐ A. 2
- ☐ B. 3
- ☐ C. 3.75
- ☐ D. 4.5
- 7) A standard deck has 52 cards. What is the probability of drawing a card that is a 10 OR a heart? (Note: one card is both 10 and a heart.)
- ☐ A. $\frac{15}{52}$
- ☐ B. $\frac{16}{52}$
- ☐ C. $\frac{17}{52}$
- ☐ D. $\frac{13}{52}$



Scan me!

For more practice
& answers



1)

Over which interval is the function decreasing most rapidly?

- ☐ A. From $x = 0$ to $x = 2$
☐ C. From $x = 4$ to $x = 6$
☐ B. From $x = 2$ to $x = 4$
☐ D. The function never decreases

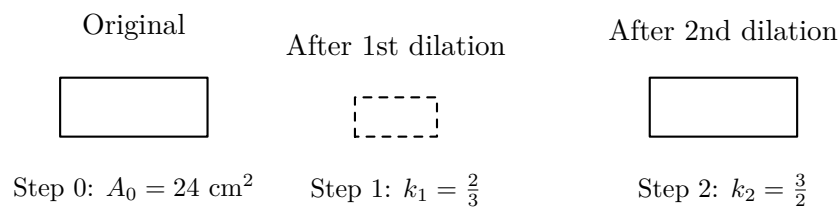
2) A regular polygon has an interior angle of 162° . How many sides does it have?

- ☐ A. 18
 ☐ C. 22
☐ B. 20
 ☐ D. 25

3) A right triangle has legs of length 1 and $\sqrt{3}$. What is the hypotenuse?

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

4) A rectangle undergoes two successive dilations: first by scale factor $\frac{2}{3}$, then by scale factor $\frac{3}{2}$. If the original rectangle has area 24 cm^2 , what is the final area?

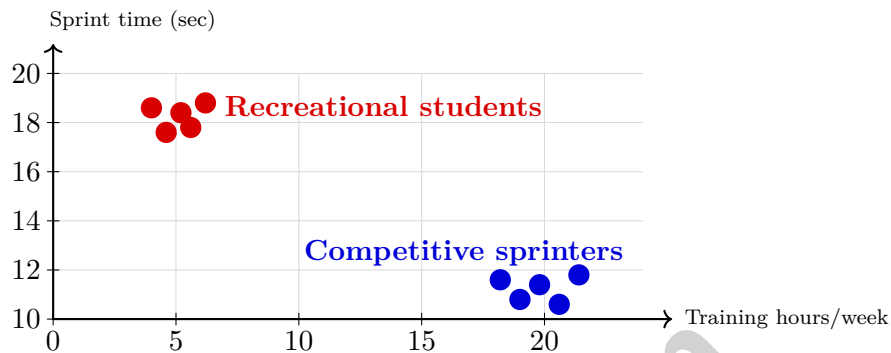


- ☐ A. 24 cm^2
☐ C. 32 cm^2
☐ B. 16 cm^2
☐ D. 54 cm^2



Scan me!
For more practice
& answers

- 5) A scatter plot compares weekly training time and sprint time for two groups. Red points represent recreational students, and blue points represent competitive sprinters. Which statement best describes the graph?



- ☐ A. All points form one cluster
 ☐ D. The groups form two separate clusters
- ☐ B. The points are randomly scattered
- ☐ C. Both groups follow the same pattern
- 6) Runner P : $d(t) = 8t$ mph. Runner Q at $t = 0$: 2 mi, $t = 3$: 27 mi. Faster?
- ☐ A. Runner P
☐ C. Both same.
- ☐ B. Runner Q
☐ D. Cannot be determined.
- 7) What two positive integers multiply to 21 and add to 10?



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.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (8.EE.B.4) $V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times 3.14 \times 27 = \frac{4}{3} \times 84.78 = 113.04 \text{ in}^3$.
- 2) **Choice D is correct.** (8.NS.A.1) By definition, a rational number can be written as $\frac{a}{b}$ where a and b are integers with $b \neq 0$. Its decimal form must terminate or have a repeating pattern.
- 3) **Choice D is correct.** (8.NS.A.2) A is all integers (rational). B contains perfect square roots (rational). C is mixed. D contains $\sqrt{2}, \sqrt{3}, \sqrt{5}$, all irrational.
- 4) **Choice C is correct.** (8.NS.A.2) $\sqrt{50} = 5\sqrt{2} \approx 5 \times 1.41 = 7.07$, not 5.0. All other statements are accurate estimates.
- 5) **Choice C is correct.** (8.F.F.4) Check each: (A) $x^5 \neq x^6$; (B) $x^6 \neq x^5$; (C) $x^4 = x^4$ ✓; (D) addition, not a law.
- 6) **Choice D is correct.** (8.EE.B.2A) If the area is 169 square inches, then $s^2 = 169$, so $s = \sqrt{169} = 13$ inches.
- 7) **The correct answer is 0.1.** (8.SP.J.2) Compute $1.2 - 1.1 = 0.1$.
- 8) **Choice D is correct.** (8.EE.B.4) Move the decimal 3 places right to get 7.2; the exponent is -3 .
- 9) **The correct answer is $\frac{1}{2}$.** (8.EE.B.4) Sample space: HH, HT, TH, TT. Exactly one heads: HT, TH. That's 2 of 4. $P = \frac{1}{2}$.
- 10) **Choice C is correct.** (8.EE.B.3) Multiply coefficients: $1.5 \times 2.4 = 3.6$. Add exponents: $10^{-3+(-2)} = 10^{-5}$. Result: 3.6×10^{-5} .
- 11) **Choice D is correct.** (8.EE.C.5) At (4, 9), the ratio $y : x = 9 : 4$. This is equivalent to $2.25 : 1$. Slope $k = 9/4 = 2.25$.
- 12) **Choice D is correct.** (8.EE.D.8A) The first two systems are lines with different equations but the same form (both are $x = 2$ or $y = 4$, not two distinct lines). Option C has parallel lines (same slope, different intercepts). Option D has different slopes, so the lines intersect at exactly one point.
- 13) **Choice A is correct.** (8.F.E.1) Option A has each input mapping to exactly one output. Option B has input 1 mapping to two outputs. Option C has input 5 mapping to two outputs. Option D has input 2 mapping to two outputs.
- 14) **The correct answer is 132.** (8.NS.A.1C) Line leader: 12 choices. Helper: 11 remaining choices. Total: $12 \times 11 = 132$ ways.
- 15) **Choice A is correct.** (8.F.F.4A) Zero slope means $\Delta y = 0$, so the line is perfectly horizontal (no vertical change). A vertical line has undefined slope.
- 16) **Choice C is correct.** (8.EE.D.8C) Let t = the time in hours after the faster cyclist starts. The faster cyclist travels $15t$ miles, and the slower cyclist's distance from the same starting point is $9 + 12t$. Set $15t = 9 + 12t$, so $3t = 9$ and $t = 3$.
- 17) **Choice A is correct.** (8.F.F.4) Look up $x = 0$ in the table; the corresponding $f(x)$ value is 3.
- 18) **Choice D is correct.** (8.G.I.9) A cube has 6 equal square faces, each with area $5 \times 5 = 25 \text{ cm}^2$. Total surface area = $6 \times 25 = 150 \text{ cm}^2$.
- 19) **Choice C is correct.** (8.G.G.1) A translation slides a figure without changing its orientation, producing a congruent image. Reflections flip, rotations turn, and dilations resize.
- 20) **Choice D is correct.** (8.EE.C.6) Check (2, 8): $\frac{3}{2}(2) + 5 = 8$, so the point lies on the line. The slope is $\frac{3}{2}$ and the y -intercept is 5; a perpendicular line would have slope $-\frac{2}{3}$, not $\frac{2}{3}$.
- 21) **Choice C is correct.** (8.EE.D.7B) Check by substitution: A: $3(2) + 4 = 10 \neq 11$ ✗. B: $5(2) - 1 = 9 \neq 12$ ✗. C: $2(2) + 3 = 7$ ✓. D: $4(2) - 2 = 6 \neq 10$ ✗. Only C is satisfied.
- 22) **The correct answer is A, C.** (8.G.G.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.
- 23) **Choice D is correct.** (8.EE.D.7) Subtract 8: $-3x \geq -6$. Divide by -3 (FLIP): $x \leq 2$.
- 24) **Choice B is correct.** (8.EE.D.7) 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 B is correct.** (8.G.I.9) Volume of a pyramid: $V = \frac{1}{3} \cdot B \cdot h = \frac{1}{3} \times (6 \times 6) \times 9 = \frac{1}{3} \times 36 \times 9 = 108 \text{ in}^3$.
- 26) **Choice B is correct.** (8.SP.J.3) The intercept 0.8 (in units of \$10000) means when $a = 0$, $S = 0.8$, or \$8000 baseline sales before advertising.



Hi, Calm Solver!

◇ This deep and steady book gave you six full Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. A calm mind can see choices more clearly. That matters in Grade 8, where one problem may have several possible entry points. ◇

★ **Remember this:** You practiced building calm by doing full tests. Each completed page is rehearsal for staying steady when the real test feels serious. ★

Calm-Test Moves

- **Pause:** Give your brain one quiet second.
- **Choose:** Pick the first useful step.
- **Continue:** Do not demand perfection immediately.
- **Check:** Use review time wisely.

Grade 8 test-day tip: If you feel rushed, slow your reading for one sentence. Clear reading saves time.

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

Jay Daie

Your Calm-Test 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



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