

Hawaii

Smarter Balanced

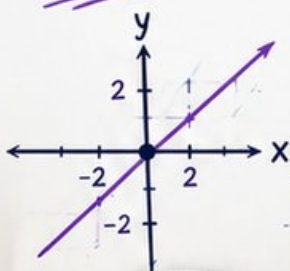
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

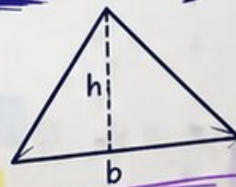
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



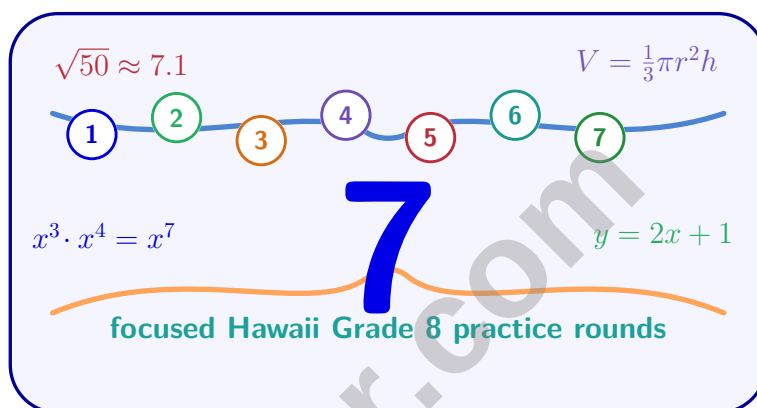
2 ONLINE
TESTS



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

7 Hawaii Smarter Balanced Grade 8 Math Practice Tests

Seven Smarter Balanced Math Rounds for Equations, Graphs, and Geometry



Seven 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



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, Hawaii Grade 8 Problem Solver!

Seven focused rounds for sharper Smarter Balanced math thinking

This book gives you seven 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 Hawaii 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 seven-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.

Hawaii 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?

Seven Smarter Balanced tests, 280 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.
Test 7	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.



Scan me!
For more practice
& answers

Table of Contents

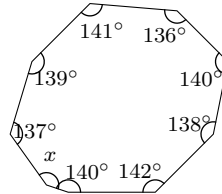
★ Practice Test 1	_____	13
★ Practice Test 2	_____	29
★ Practice Test 3	_____	43
★ Practice Test 4	_____	57
★ Practice Test 5	_____	72
★ Practice Test 6	_____	87
★ Practice Test 7	_____	103
Practice Test Answer Keys	_____	119
Practice Test Answers and Explanations	_____	124

1) A right triangle has legs of length 6 and 8. What is the length of the hypotenuse?

☐ A. 10

☐ C. 11

☐ B. 12

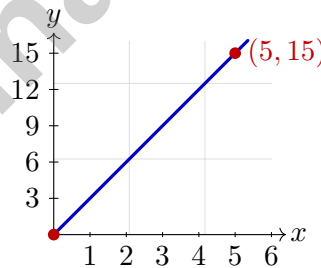
☐ D. 14


2)

A nonagon (9-sided polygon) has eight interior angles: $140^\circ, 142^\circ, 138^\circ, 140^\circ, 136^\circ, 141^\circ, 139^\circ, 137^\circ$. Find the ninth angle.

☐ A. 145°
☐ C. 150°
☐ B. 147°
☐ D. 152°

3) A graph of a proportional relationship passes through the origin and $(5, 15)$. What is the slope (unit rate)?


☐ A. 2

☐ C. 5

☐ B. 15

☐ D. 3


Scan me!
For more practice
& answers

4) Which table represents a NONLINEAR function?

x	0	1	2	3
y	1	2	4	8

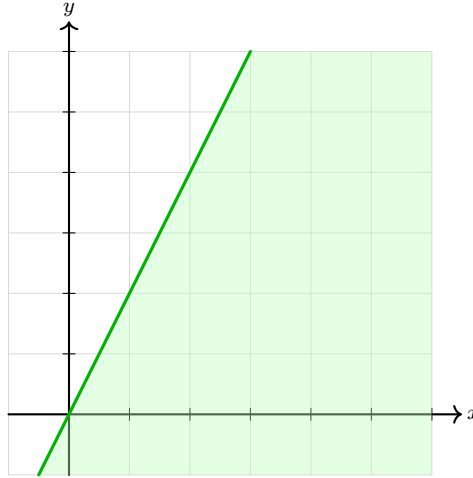
- ☐ A. No, y increases ☐ C. Yes, the y -values are doubling
☐ B. Yes, the first differences are not constant ☐ D. No, the x -values are equally spaced

5) A figure is dilated by a scale factor of 3. How does the length of each side change?

- ☐ A. Divided by 3 ☐ C. Unchanged
☐ B. Multiplied by 3 ☐ D. Increased by 3 inches

6) Solve the system $\begin{cases} 2x + y = 5 \\ x - y = 4 \end{cases}$ by elimination.





7)

The graph shows which inequality?

☐ A. $y > 2x$

☐ B. $y < 2x$

☐ C. $y \geq 2x$

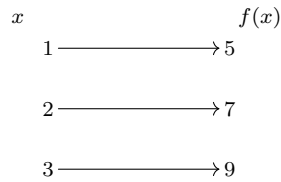
☐ D. $y \leq 2x$

8) Solve $-4(x + 1) < 12$. What is the boundary value?



Scan me!
For more practice
& answers

- 1) The mapping diagram shows function f . What is $f(2)$?



- ☐ A. 5
☐ B. 7

☐ C. 9
☐ D. 2

2)

x	y
-1	0
0	3
1	6

What is the equation of the line represented by the table?

- ☐ A. $y = 3x + 3$
☐ B. $y = 3x - 3$

☐ C. $y = -3x + 3$
☐ D. $y = x + 3$

- 3) Compute $(2.5 \times 10^3) \times (4 \times 10^2)$ and write your answer in scientific notation.

- 4) A savings goal is to have more than \$500. Currently you have \$150 and save \$25 per week. Which inequality describes the number of weeks needed to exceed the goal?

- ☐ A. $w \geq 14$
☐ B. $w < 14$

☐ C. $w \leq 14$
☐ D. $w > 14$



Scan me!
For more practice
& answers

5) A right triangle has legs of $\sqrt{24}$ and 1. What is the hypotenuse in simplified form?

☐ A. $\sqrt{24}$

☐ B. 5

☐ C. $\sqrt{23}$

☐ D. 25

6) If a polygon has an interior angle sum of 900° , how many sides does it have?

☐ A. 5

☐ B. 6

☐ C. 7

☐ D. 8

7) The cost of a gym membership is \$50 per month. If Sarah spends a total of \$200 after t months, write and solve an equation to find t . Verify your answer.

8) An online music streaming service charges per song. A listener downloads 8 songs for \$9.60. What is the cost per song?

☐ A. \$1.00

☐ B. \$1.10

☐ C. \$1.20

☐ D. \$1.30

9) The function $y = \sqrt{x-1}$ is LINEAR or NONLINEAR?

☐ A. Linear, because it has a constant slope

☐ B. Nonlinear, because $x \geq 1$

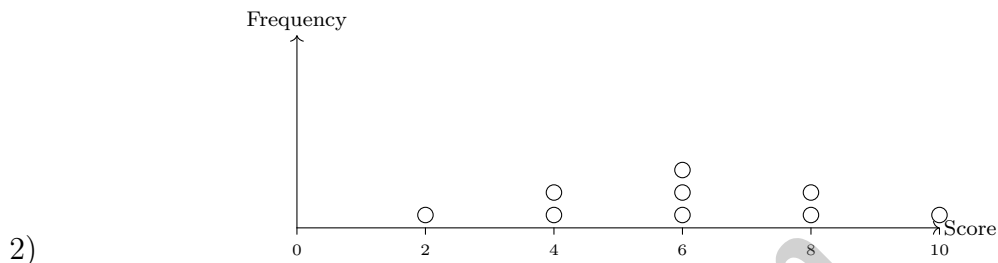
☐ C. Linear, because x appears once

☐ D. Nonlinear, because it contains a square root



- 1) A triangular pyramid has an isosceles triangular base with base 8 cm and height (of the triangle) 6 cm. The pyramid height is 9 cm. What is the pyramid's volume?

- ☐ A. 72 cm^3
☐ C. 144 cm^3
☐ B. 96 cm^3
☐ D. 288 cm^3



Data from dot plot: $\{2, 4, 4, 6, 6, 6, 8, 8, 10\}$ with mean = 6. Find MAD.

- ☐ A. 1.5
 ☐ C. 2
☐ B. 1.78
 ☐ D. 2.2

3)

	Fiction	Science
Hardcover	8	5
Paperback	4	3

A library shelf has the books shown. If two books are selected without replacement, what is the probability both are hardcover fiction?

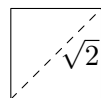
- ☐ A. $\frac{8}{20}$
☐ C. $\frac{28}{400}$
☐ B. $\frac{64}{400}$
☐ D. $\frac{14}{95}$

- 4) Five athletes compete in a race. In how many ways can they finish in 1st, 2nd, and 3rd place?

- ☐ A. $5^3 = 125$
☐ C. $5 \times 4 \times 3 = 60$
☐ B. $5! = 120$
☐ D. $\binom{5}{3} = 10$



Scan me!
For more practice
& answers



Side = 1

5)

The diagonal of a square with side length 1 unit is $\sqrt{2}$ units. Between which integers is this diagonal?

☐ A. Between 0 and 1☐ C. Between 2 and 3☐ B. Between 3 and 4☐ D. Between 1 and 2

6) Which number can be expressed as a fraction?

☐ A. $\sqrt{11}$ ☐ C. $\frac{8}{3}$ ☐ B. 2π ☐ D. $\sqrt{2} + 1$ 7) Convert $0.\overline{81}$ to a fraction in simplest form.☐ A. $\frac{81}{100}$ ☐ C. $\frac{81}{90}$ ☐ B. $\frac{1}{81}$ ☐ D. $\frac{81}{99} = \frac{9}{11}$ 8) Is $\sqrt{7} + 2$ greater than, less than, or equal to 4.6?☐ A. Cannot be determined☐ C. Exactly 4.6☐ B. Less than 4.6☐ D. Greater than 4.69) The slope of line ℓ_1 is $\frac{3}{4}$. If line ℓ_2 is perpendicular to ℓ_1 , what is the slope of ℓ_2 ?☐ A. $\frac{3}{4}$ ☐ C. $-\frac{4}{3}$ ☐ B. $-\frac{3}{4}$ ☐ D. $\frac{4}{3}$ 

Hawaii 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 Hawaii Smarter Balanced practice test.



Scan me!
For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **(8.G.B.6, 8.G.B.7)** Pythagorean Theorem: $a^2 + b^2 = c^2$, so $6^2 + 8^2 = c^2$, $36 + 64 = 100$, $c = \sqrt{100} = 10$.
- 2) **Choice B is correct.** **(8.G.A.5)** A nonagon's interior angles sum to $(9 - 2) \times 180 = 1260^\circ$. The eight known angles sum to $140 + 142 + 138 + 140 + 136 + 141 + 139 + 137 = 1113^\circ$, so the ninth angle is $1260 - 1113 = 147^\circ$.
- 3) **Choice D is correct.** **(8.EE.B.5)** Slope = $\frac{\Delta y}{\Delta x} = \frac{15-0}{5-0} = 3$. For a proportional line through the origin, the slope equals the unit rate.
- 4) **Choice B is correct.** **(8.F.A.3)** The differences between consecutive y -values are $2 - 1 = 1$, $4 - 2 = 2$, $8 - 4 = 4$. These are not constant, which indicates the function is nonlinear.
- 5) **Choice B is correct.** **(8.G.A.4)** Dilation with a scale factor of k multiplies every distance (and side length) by k . Here each side becomes 3 times longer. Distractor D confuses scale factor with absolute addition.
- 6) **The correct answer is (3, -1).** **(8.EE.C.8a)** Add the equations: $(2x + y) + (x - y) = 5 + 4$, so $3x = 9$, giving $x = 3$. Substitute: $3 - y = 4$, so $y = -1$.
- 7) **Choice D is correct.** **(8.EE.C.8b)** SOLID line (includes boundary) and shading BELOW the line indicates $y \leq 2x$.
- 8) **The correct answer is -4.** **(8.EE.C.8b)** Solving gives $x > -4$, so the boundary value is -4.
- 9) **Choice A is correct.** **(8.G.B.8)** $d = \sqrt{(4-0)^2 + (0-3)^2} = \sqrt{16+9} = \sqrt{25} = 5$.
- 10) **Choice B is correct.** **(8.G.C.9)** Original: $V = \pi r^2 h$. New: $V' = \pi(2r)^2(\frac{h}{2}) = \pi \times 4r^2 \times \frac{h}{2} = 2\pi r^2 h = 2V$.
- 11) **Choice B is correct.** **(8.EE.C.7)** GCF is 6: $6x^2 + 12x + 6 = 6(x^2 + 2x + 1) = 6(x+1)^2$.
- 12) **Choice C is correct.** **(8.F.A.2)** Both have slope $\frac{1}{2}$. Intercepts are 3 and -2. Parallel lines.
- 13) **Choice A is correct.** **(8.F.B.4)** Initial altitude is 200 cm (intercept). Altitude decreases by 5 cm per second (negative slope). Equation: $h = -5t + 200$.
- 14) **Choice A is correct.** **(8.G.A.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.
- 15) **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 $A = 2(25) + 5 = 55^\circ$.
- 16) **The correct answer is (7, -1).** **(8.G.A.1)** Apply the translation $(x, y) \rightarrow (x+5, y-3)$: $(2, 2) \rightarrow (2+5, 2-3) = (7, -1)$.
- 17) **Choice B is correct.** **(8.G.B.7)** Let the complement be x . Then $(x + 25) + x = 90 \Rightarrow 2x + 25 = 90 \Rightarrow 2x = 65 \Rightarrow x = 32.5^\circ$.
- 18) **Choice B is correct.** **(8.G.C.9)** $B = 9 \times 4 = 36 \text{ m}^2$. $V = \frac{1}{3} \times 36 \times 6 = 72 \text{ m}^3$.
- 19) **The correct answer is A, B.** **(8.EE.B.6)** Options A and B both have slope 4, making them parallel. Option C has slope -4, option D has slope $\frac{1}{4}$, and option E has slope 2, so none of these match.
- 20) **Choice B is correct.** **(8.G.B.7)** Rectangle area = $6 \times 5 = 30 \text{ m}^2$. Triangle area = $\frac{1}{2} \times 6 \times 2 = 6 \text{ m}^2$. Total = $30 + 6 = 36 \text{ m}^2$.
- 21) **Choice D is correct.** **(8.SP.A.1)** Study method (alone vs. group) acts as a confounding variable, causing the data to split into two clusters at the same x -value but different y -values. This shows that the relationship is more complex than a single bivariate correlation.
- 22) **Choice C is correct.** **(8.SP.A.4)** Row-conditional frequency: among high-quality products (row total 320), premium count 240. Denominator is row total. This is 0.75 or 75%.
- 23) **Choice B is correct.** **(8.G.B.8)** Absolute deviations: $|4 - 6| = 2$, $|4 - 6| = 2$, $|8 - 6| = 2$, $|8 - 6| = 2$. Sum = 8. MAD = $8/4 = 2$.
- 24) **Choice D is correct.** **(8.G.B.7)** $P(\text{not } 7) = 1 - P(7) = 1 - \frac{1}{12} = \frac{11}{12}$.
- 25) **Choice B is correct.** **(8.EE.C.7b)** Captain: 10 choices. Co-captain: 9 remaining. Goalkeeper: 8 remaining. Total: $10 \times 9 \times 8 = 720$.
- 26) **Choice A is correct.** **(8.SP.A.2)** A poor fit means the line fails to capture the pattern in the data. Large gaps (residuals) between points and the line indicate a weak relationship. A good fit minimizes these distances.



Hi, Momentum Builder!

◇ Finishing a Grade 8 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 7 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 8 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 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!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

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! |



2 EXTRA ONLINE PRACTICE TESTS INCLUDED!

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

testinar.com/math8

BUILD CONFIDENCE. SHARPEN SKILLS. ACE YOUR EXAM!