

CALIFORNIA CAASPP

GRADE 8 MATH

PRACTICE TESTS

5

PRINTED
TESTS



2

 ONLINE
TESTS

**Standards Aligned
Problem Solving For
Comprehensive Assessment Programs**



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



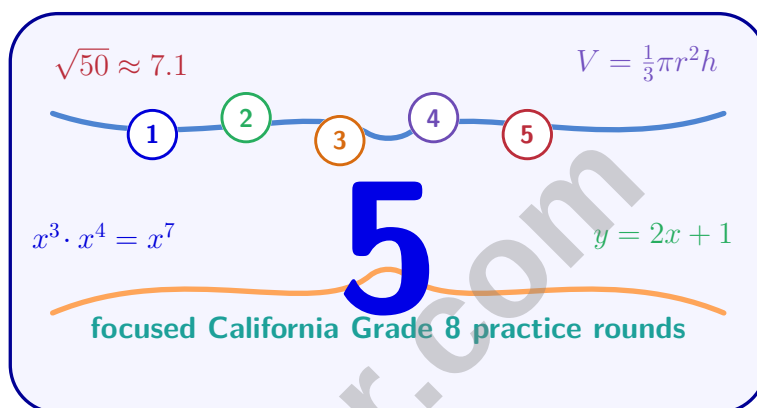
$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 California CAASPP Grade 8 Math Practice Tests

Targeted CAASPP Review for Grade 8 Math Readiness



Five complete 40-question Grade 8 CAASPP 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, California Grade 8 Problem Solver!

Five focused rounds for sharper CAASPP math thinking

This book gives you five full Grade 8 CAASPP 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 California 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 five-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.

California 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?

Five CAASPP tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	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.

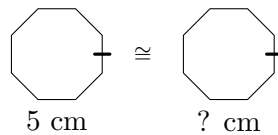


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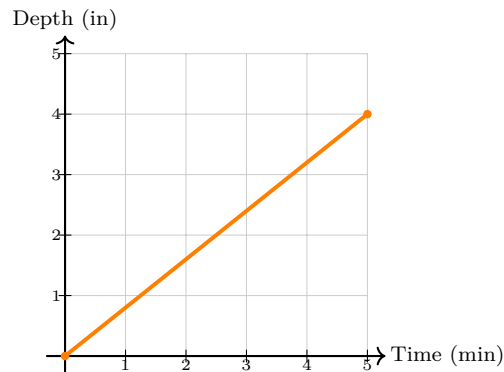
- 1) Two congruent regular octagons are shown. Each octagon has 8 sides of equal length. If Octagon 1 has a side length of 5 cm and a perimeter of 40 cm, what is the perimeter of Octagon 2?



- ☐ A. 20 cm ☐ C. 5 cm
☐ B. 40 cm ☐ D. 80 cm
- 2) Estimate $\sqrt{99}$ to the nearest integer.
- ☐ A. 8 ☐ C. 10
☐ B. 9 ☐ D. 11
- 3) $(2.1 \times 10^4) \times (3 \times 10^2) = ?$
- ☐ A. 5.1×10^6 ☐ C. 0.63×10^6
☐ B. 5.1×10^2 ☐ D. 6.3×10^6
- 4) A computer downloads files at 15 MB per second. How many MB are downloaded in 2.5 seconds?
- ☐ A. 30 MB ☐ C. 37.5 MB
☐ B. 35 MB ☐ D. 40 MB
- 5) Plan X: \$10/week, start \$0. Plan Y: \$8/week, start \$50. After how many weeks equal?



- 6) A graph shows depth of water versus time as a pool is filled.

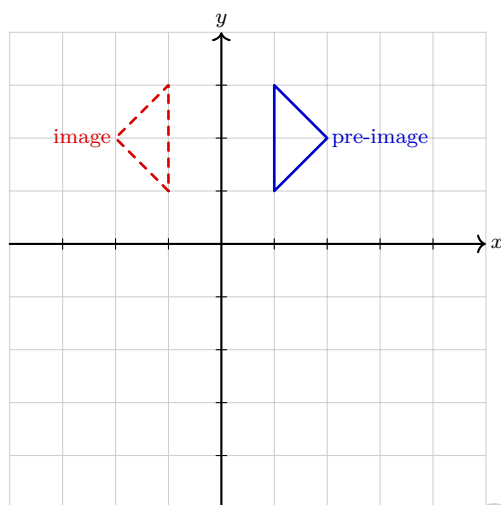


What is the filling rate (slope)?

- ☐ A. $\frac{4}{5}$ inches per minute
- ☐ B. $\frac{5}{4}$ inches per minute
- ☐ C. 4 inches per minute
- ☐ D. 5 inches per minute
- 7) Two hikers start from the same trailhead and walk in the same direction. One walks at 3 mph and the other at 4 mph. If they walk for the same amount of time, after how many hours will the faster hiker be 2 miles ahead?
- ☐ A. 0.5 hours
- ☐ B. 1 hour
- ☐ C. 1.5 hours
- ☐ D. 2 hours
- 8) A savings account has $S(n) = 50 + 10n$ dollars after n weeks. After how many weeks will the account have \$150?
- ☐ A. 5 weeks
- ☐ B. 10 weeks
- ☐ C. 15 weeks
- ☐ D. 20 weeks



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9)

The pre-image triangle (dark blue) is reflected to form the image triangle (red). Over which line is the triangle reflected?

- ☐ A. The x -axis
☐ B. The y -axis
☐ C. The line $y = 1$
☐ D. The line $x = 1$

10) In a right triangle, one acute angle measures 38° . What is the measure of the other acute angle?

- ☐ A. 38°
☐ B. 42°
☐ C. 52°
☐ D. 90°

11) A right triangle has legs of $\sqrt{32}$ and $\sqrt{4}$. What is the hypotenuse in simplified radical form?

- ☐ A. $\sqrt{36}$ (which is 6)
☐ B. 6
☐ C. $\sqrt{28}$
☐ D. $\sqrt{68}$



1) A line passes through (0.5, 3) and (2, 9). What is the slope?

☐ A. 2

☐ C. 6

☐ B. 4

☐ D. $\frac{1}{4}$

2) A student claims that $\sqrt{49} + \sqrt{64} = \sqrt{113}$. Is this correct?

☐ A. Yes, because $49 + 64 = 113$

☐ C. No, because square roots cannot be added

☐ B. Yes, but only if we simplify the radicals first

☐ D. No, because $\sqrt{49} + \sqrt{64} = 15$

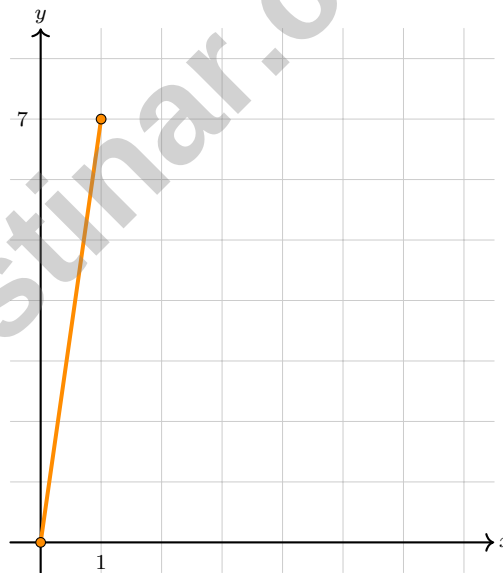
3) Approximately how many times larger is 3×10^5 than 5×10^4 ?

☐ A. About 10 times

☐ C. About 6 times

☐ B. About 60 times

☐ D. About 100 times



4)

Equation of the line?

☐ A. $y = \frac{1}{7}x$

☐ C. $y = 7x$

☐ B. $y = x + 7$

☐ D. $y = 7 + x$



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5) A plane is descending. Its altitude decreases 2000 feet for every 5 minutes. What is the slope of altitude versus time?

- ☐ A. 400 feet per minute ☐ C. $\frac{5}{2000}$ feet per minute
☐ B. 2000 feet per minute ☐ D. -400 feet per minute

6) A student solves: "A jar has pennies and quarters totaling \$5.00 with 40 coins. How many quarters are there?" The student correctly sets up $p + q = 40$ (coins) and $0.01p + 0.25q = 5.00$ (dollars) and solves to get $q \approx 19.17$. Which statement best describes the issue?

- ☐ A. The student should have used cents: $p + 25q = 500$ instead.
☐ B. The student should use elimination instead of substitution.
☐ C. The answer must be a whole number, so the problem statement likely has a typo.
☐ D. The system is correct, and 19.17 quarters is a valid final answer.

7) If $f(x) = -3x + 10$, what is $f(2)$?

- ☐ A. 4 ☐ C. -6
☐ B. 16 ☐ D. 6

8) Shipping: $C(w) = 5 + 0.5w$. Competitor at $(0, 7)$, $(5, 9.5)$. Higher base cost?

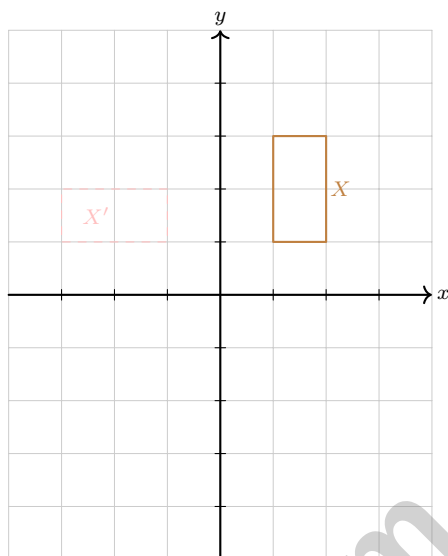
- ☐ A. First ☐ C. Both same.
☐ B. Second ☐ D. Cannot be determined.

9) The table below shows costs. Identify whether the relationship is linear.

Quantity	1	2	3	4
Cost (\$)	12	24	36	48

- ☐ A. Yes, each item costs \$12 ☐ C. No, costs only go up
☐ B. No, the cost is too high ☐ D. Yes, because the total cost increases





1)

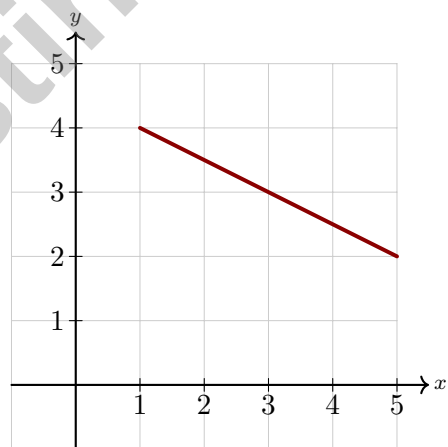
Shape X (brown) is rotated 90° counterclockwise about the origin to produce X' (pink). Which vertex of X' corresponds to the vertex at $(2, 1)$ in X ?

☐ A. $(-1, 2)$

☐ C. $(1, -2)$

☐ B. $(-2, 1)$

☐ D. $(-3, 1)$



2)

What is the equation of the line shown?

☐ A. $y = -\frac{1}{2}x + \frac{9}{2}$

☐ C. $y = -2x + 6$

☐ B. $y = 2x + 2$

☐ D. $y = \frac{1}{2}x + 3$



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3) Simplify $\frac{(b^3)^2 \cdot b^4}{b^5}$.

☐ A. b^{-5}

☐ B. b^9

☐ C. b^{15}

☐ D. b^5

4) If $x^2 = 81$, what are the possible values of x ?

☐ A. 9 only

☐ B. -9 only

☐ C. 9 or -9

☐ D. 3 or -3

5) The energy released by a small explosion is about 2×10^{12} joules. A TNT equivalent is often measured where 1 kiloton TNT $\approx 4 \times 10^{12}$ joules. How many kilotons is the explosion?

☐ A. 2 kilotons

☐ B. 5×10^1 kilotons

☐ C. 0.5 kilotons

☐ D. 8×10^{23} kilotons

6) An athlete drinks 8 ounces of water for every 10 minutes of exercise. After 45 minutes of exercise, how many ounces has the athlete drunk?

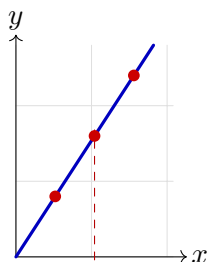
☐ A. 30 ounces

☐ B. 45 ounces

☐ C. 40 ounces

☐ D. 36 ounces

7) Is the graph of a straight line passing through $(1, 2)$ and $(3, 6)$ a function?



☐ A. No, it is not steep enough.

☐ B. Yes, because it is a straight line.

☐ C. Yes, it passes the vertical line test.

☐ D. No, because the slope is positive.



California CAASPP 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 California CAASPP practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (8.G.2) Congruent figures have equal corresponding sides. Since both octagons have 8 sides of 5 cm each, both have perimeter $8 \times 5 = 40$ cm.
- 2) **Choice C is correct.** (8.EE.2) $9^2 = 81$ and $10^2 = 100$. Since 99 is very close to 100, $\sqrt{99} \approx 9.95 \approx 10$.
- 3) **Choice D is correct.** (8.EE.4) Multiply coefficients: $2.1 \times 3 = 6.3$. Add exponents: $10^{4+2} = 10^6$. Result: 6.3×10^6 .
- 4) **Choice C is correct.** (8.EE.5) Proportional: $y = 15x$. For $x = 2.5$: $y = 15(2.5) = 37.5$ MB.
- 5) **The correct answer is 25.** (8.F.2) $S_X(w) = 10w$, $S_Y(w) = 50 + 8w$. Equal when $10w = 50 + 8w \Rightarrow w = 25$.
- 6) **Choice A is correct.** (8.EE.8) From (0, 0) to (5, 4): slope = $\frac{4-0}{5-0} = \frac{4}{5}$ inches per minute.
- 7) **Choice D is correct.** (8.EE.7) Let t be the number of hours. The faster hiker gains $4t - 3t = t$ miles on the slower hiker. Set $t = 2$, so the faster hiker is 2 miles ahead after 2 hours.
- 8) **Choice B is correct.** (8.F.1) Solve $50 + 10n = 150$ for n : subtract 50 to get $10n = 100$, so $n = 10$ weeks.
- 9) **Choice B is correct.** (8.G.3) The point (1, 1) maps to (-1, 1), and (2, 2) maps to (-2, 2). This is reflection across the y -axis: $(x, y) \rightarrow (-x, y)$.
- 10) **Choice C is correct.** (8.G.5) In a right triangle, the two acute angles are complementary: $38 + x = 90$, so $x = 52^\circ$.
- 11) **Choice B is correct.** (8.G.6, 8.G.7) From $(\sqrt{32})^2 + (\sqrt{4})^2 = c^2$, we get $32 + 4 = 36$, so $c = \sqrt{36} = 6$.
- 12) **Choice B is correct.** (8.G.8) $d = \sqrt{(10-1)^2 + (13-1)^2} = \sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$.
- 13) **Choice A is correct.** (8.G.7) Complementary angles sum to 90° . So the complement is $90 - 46 = 44^\circ$.
- 14) **Choice C is correct.** (8.G.9) $1200 = \frac{1}{3} \times B \times 10 \Rightarrow B = \frac{1200 \times 3}{10} = 360 \text{ m}^2$.
- 15) **Choice C is correct.** (8.G.7) Rectangle = $9 \times 6 = 54 \text{ m}^2$. Triangle = $\frac{1}{2} \times 9 \times 5 = 22.5 \text{ m}^2$. Total = $54 + 22.5 = 76.5 \text{ m}^2$. Missing the triangle piece leads to undercounting.
- 16) **Choice A is correct.** (8.G.5) The sum of interior angles in a hexagon is 720° . The known angles add to $85 + 125 + 140 + 110 + 98 = 558^\circ$, so $x = 720 - 558 = 162^\circ$.
- 17) **The correct answer is 2.** (8.F.3) The change in y is 4 when x increases by 2, so the slope is $4 \div 2 = 2$.
- 18) **Choice A is correct.** (8.SP.1) The changing return on spending (10 dollars $\rightarrow$ 25 dollars) indicates a nonlinear relationship. A linear relationship would show constant returns.
- 19) **The correct answer is B, D.** (8.F.1) Option B: each input (0, 1, 2, 3) has exactly one output (0, 1, 2, 3)—a function. Option D: each input (5, 6, 7) has exactly one output (1, 2, 3)—a function. Option A: input 1 maps to both 2 and 3—not a function. Option C: input 2 maps to both 4 and 5—not a function. Option E: input 1 maps to both 1 and 3—not a function.
- 20) **Choice B is correct.** (8.SP.3) The data covers 5 to 20 minutes; predicting at 25 minutes is beyond the observed range, making it extrapolation.
- 21) **Choice A is correct.** (8.SP.4) Joint relative frequency: $\frac{63}{420} = 0.15 = 15\%$.
- 22) **Choice B is correct.** (8.NS.2) Choose from 3 math classes and 2 science classes: $3 \times 2 = 6$ possible combinations.
- 23) **Choice A is correct.** (8.F.4) Slope is $m = \frac{10-2}{4-0} = \frac{8}{4} = 2$.
- 24) **Choice A is correct.** (8.SP.2) Slope $\approx \frac{9.2-1}{8.3-0.7} = \frac{8.2}{7.6} \approx 1.08 \text{ kg/mm}$.
- 25) **Choice B is correct.** (8.G.4) Verify each side ratio: $\frac{6}{3} = 2$, $\frac{8}{4} = 2$, $\frac{10}{5} = 2$, $\frac{12}{6} = 2$. All ratios are constant, so sides are proportional (scale factor 2). Combined with congruent corresponding angles, the quadrilaterals are similar.
- 26) **Choice D is correct.** (8.NS.1) Since $3^2 = 9$ and $4^2 = 16$, any square root between $\sqrt{9}$ and $\sqrt{16}$ lies between 3 and 4. Because 13 is between 9 and 16, $\sqrt{13}$ is between 3 and 4. Also, $\sqrt{8} \approx 2.83$, $\sqrt{13} \approx 3.61$, $\sqrt{20} \approx 4.47$, and $\sqrt{25} = 5$, so only $\sqrt{13}$ is in the interval from 3 to 4.
- 27) **Choice B is correct.** (8.G.7) These are mutually exclusive. $P(5 \text{ or } 9) = P(5) + P(9) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52}$.
- 28) **Choice D is correct.** (8.G.1) Let $x = 0.54$. Then $100x = 54.54$. Subtracting: $99x = 54$, so $x = \frac{54}{99} = \frac{6}{11}$.



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Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 5 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 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 |
| ✓ Measurement & Data | ✓ And More! |

5
PRINTED
TESTS



2 ONLINE
TESTS



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