

6 California CAASPP

GRADE 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving For
Comprehensive Assessment Programs



6 PRINTED
TESTS



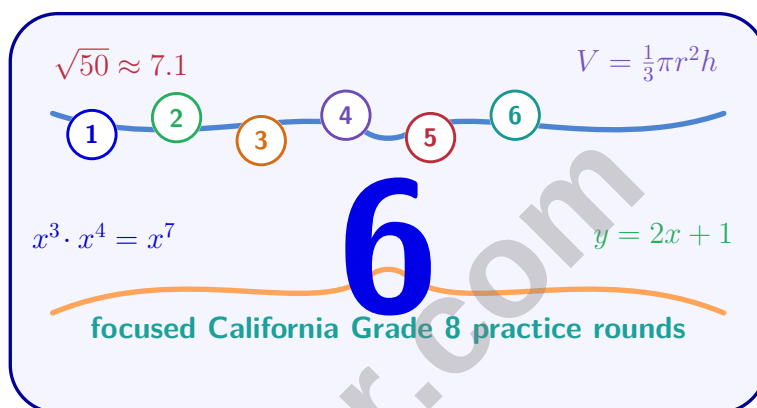
2 ONLINE
TESTS



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

6 California CAASPP Grade 8 Math Practice Tests

Clear Grade 8 Practice for Equations, Functions, Geometry, and Statistics



Six 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!

Six focused rounds for sharper CAASPP math thinking

This book gives you six 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 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.

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?

Six CAASPP 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.



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& answers

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- 1) A jar has 8 buttons: 3 white and 5 black. Two buttons are drawn without replacement. What is the probability that the first is white and the second is black?

☐ A. $\frac{3}{8}$
☐ B. $\frac{8}{56}$

☐ C. $\frac{15}{56}$
☐ D. $\frac{5}{16}$

- 2) Which decimal representation indicates an irrational number?

☐ A. 0.875

☐ D. 2.718281828... (non-repeating,

☐ B. 0.123123123... (repeating pattern) non-terminating)

☐ C. $0.5\overline{3}$ (where 3 repeats)

- 3) How many times smaller is 1.5×10^{-6} than 1.5×10^{-3} ?

☐ A. 3 times

☐ C. 300 times

☐ B. 30 times

☐ D. 1,000 times

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

- 5) Which point lies on the line $y = 2x - 3$?

☐ A. (0, 3)

☐ C. (1, 1)

☐ B. (3, -3)

☐ D. (2, 1)



6) $\sqrt{68}$ is closest to which integer?

☐ A. 7

☐ C. 9

☐ B. 6

☐ D. 8

7) Which statement is true?

☐ A. $\sqrt{36}$ is irrational

☐ C. $\sqrt{11}$ is irrational

☐ B. π is rational

☐ D. $0.333\ldots$ is irrational

8) Simplify $\frac{m^8}{m^5} \cdot m^2$.

☐ A. m^{15}

☐ C. m^{13}

☐ B. m^1

☐ D. m^5

9) In how many ways can 4 students be arranged in a line for a class photo?

10) Which of the following is irrational?

☐ A. $\sqrt{25}$

☐ C. $\sqrt{100}$

☐ B. $\sqrt{144}$

☐ D. $\sqrt{40}$

11) A bacteria culture doubles every hour. Starting with 5×10^3 bacteria, after 3 hours the population is $5 \times 10^3 \times 2^3$. Express this in scientific notation.

☐ A. 4×10^3

☐ C. 4×10^4

☐ B. 10×10^4

☐ D. 1.6×10^5



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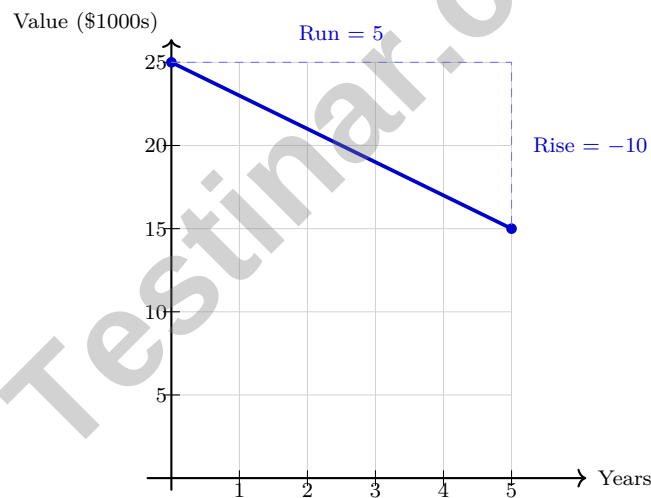
12) If 6 pounds of almonds cost \$30, what is the constant of proportionality (unit price)?

- ☐ A. \$4 per pound ☐ C. \$6 per pound
☐ B. \$8 per pound ☐ D. \$5 per pound

13) A pizza restaurant charges \$12 for a large pizza and \$1.50 per topping. Is the total cost a function of the number of toppings?

- ☐ A. No, because the base price is fixed. ☐ D. Yes, only if the customer is satisfied with the pizza.
☐ B. No, because toppings are not free.
☐ C. Yes, each number of toppings gives exactly one total cost.

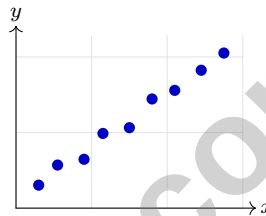
14) A graph shows the value of a car (in \$1000s) depreciating over years. The line passes through (0, 25) and (5, 15).



- ☐ A. -\$2000 per year ☐ C. \$2000 per year
☐ B. -\$1000 per year ☐ D. 5 years per \$1000



- 1) To solve the system $y = 2x - 3$ and $y = -x + 6$, which method is most efficient?
- ☐ A. Elimination ☐ C. Substitution
- ☐ B. Graphing ☐ D. Guess and check
- 2) An equilateral triangle has side length 5 cm. A similar equilateral triangle has perimeter 60 cm. What is the scale factor?
- ☐ A. 3 ☐ C. 12
- ☐ B. 4 ☐ D. $\frac{1}{4}$



3)

A scatter plot shows hours of sleep (x) versus cognitive test score (y) for a sample of college students. The relationship is strong and positive ($r = 0.88$). An advertisement claims: **“Buy our mattress; it will increase your test scores by 20 points!”** What is the logical flaw?

- ☐ A. Correlation coefficients cannot be negative ☐ C. Strong correlation does not prove that the mattress causes better scores
- ☐ B. College students do not sleep enough ☐ D. Sleep has no effect on test scores



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4) A two-way table of 250 survey respondents:

	Coffee	Tea	Total
Morning	100	50	150
Afternoon	60	40	100
Total	160	90	250

Among tea drinkers, what is the relative frequency of afternoon consumers, as a decimal?

☐ A. ≈ 0.44

☐ C. ≈ 0.36

☐ B. ≈ 0.40

☐ D. ≈ 0.32

5)

Value	2	4	6
-------	---	---	---

Find the MAD. (Mean = 4)

☐ A. $\frac{4}{3}$

☐ C. $\frac{8}{3}$

☐ B. 2

☐ D. 4

6) A drawer has 8 distinct socks. If you pick 2 socks one at a time (without replacement) for a pair, in how many ways can this be done if order matters?

☐ A. $8 + 7 = 15$

☐ C. $\binom{8}{2} = 28$

☐ B. $8 \times 7 = 56$

☐ D. $8^2 = 64$

7) A trend line has equation $y = 2.5x - 5$. What would be the predicted value of y when $x = 10$?

☐ A. 30

☐ C. 20

☐ B. 25

☐ D. 15

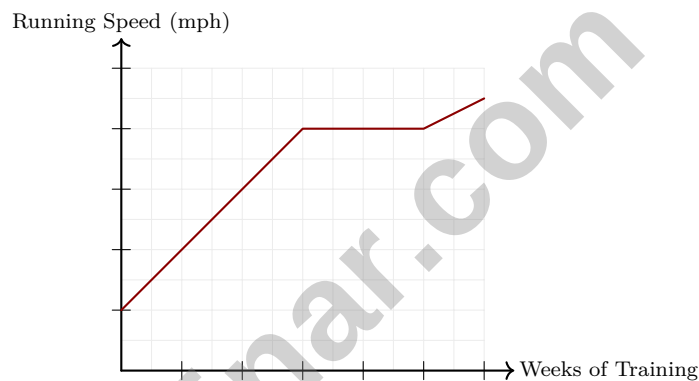


1) A scientist collects data on plant height over weeks. The table shows:

Week	0	1	2	3
Height (cm)	5	8	12	17

Is the growth linear or nonlinear?

- ☐ A. Linear; first difference is constant at 5 ☐ C. Linear; the plant always grows at 5
☐ B. Nonlinear; differences are 3, 4, 5 after week 3 (not constant) ☐ D. Nonlinear; cannot predict height



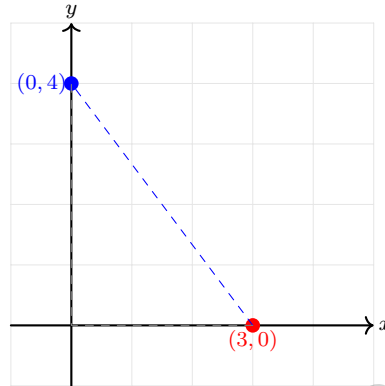
2)

A runner trains for 6 weeks. Speed increases for the first 3 weeks, stays constant for 2 weeks (maintenance phase), then improves slightly. During weeks 3–5, what is the runner's speed trend?

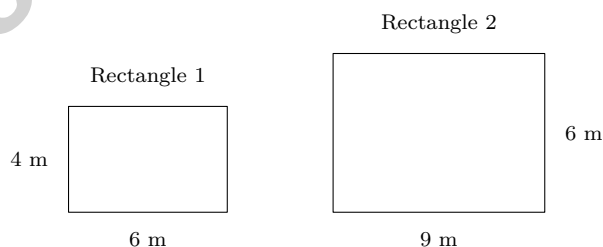
- ☐ A. Speed continues to increase ☐ C. Speed decreases
☐ B. Speed remains constant ☐ D. Speed fluctuates randomly



- 3) A student is finding the distance between points $(3, 0)$ and $(0, 4)$ and writes: $d = 3 + 4 = 7$. What is the error?



- ☐ A. They should square the differences before adding them.
 ☐ C. They forgot to take the square root.
- ☐ B. The answer is actually correct.
 ☐ D. They added instead of subtracting the coordinates.
- 4) Which of the following is NOT a valid interior angle for a regular polygon?
- ☐ A. 162°
☐ C. 144°
- ☐ B. 108°
☐ D. 130°
- 5) Two rectangles are shown with proportional dimensions. Which similarity statement is correct?



- ☐ A. Rectangle 1 $\sim$ Rectangle 2 with scale factor 1.5
 ☐ C. Rectangle 1 $\sim$ Rectangle 2 with scale factor 0.5
- ☐ B. The rectangles are not similar
 ☐ D. They are congruent



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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 C is correct.** (8.G.7) $P(\text{white first}) = \frac{3}{8}$; $P(\text{black second} \mid \text{white first}) = \frac{5}{7}$. Product: $\frac{3}{8} \times \frac{5}{7} = \frac{15}{56}$.
- 2) **Choice D is correct.** (8.NS.1) A decimal that neither terminates nor repeats is irrational. The value 2.718... approximates Euler's number e , which is irrational. The others all terminate or repeat, making them rational.
- 3) **Choice D is correct.** (8.EE.3) Divide the larger value by the smaller value: $\frac{1.5 \times 10^{-3}}{1.5 \times 10^{-6}} = \frac{1.5}{1.5} \times 10^{-3-(-6)} = 1 \times 10^3 = 1,000$.
- 4) **The correct answer is 0.1.** (8.SP.2) Compute $1.2 - 1.1 = 0.1$.
- 5) **Choice D is correct.** (8.EE.6) Substitute the point: for $(2, 1)$, $y = 2(2) - 3 = 4 - 3 = 1$. That matches the point's y -value, so $(2, 1)$ lies on the line.
- 6) **Choice D is correct.** (8.NS.2) $8^2 = 64$ and $9^2 = 81$. Since 68 is closer to 64 than to 81 (distance 4 vs. 13), $\sqrt{68} \approx 8.25$ is closest to 8.
- 7) **Choice C is correct.** (8.NS.2) $\sqrt{36} = 6$ (rational), π is irrational, and $0.333... = \frac{1}{3}$ (rational). $\sqrt{11}$ cannot be expressed as a ratio of integers.
- 8) **Choice D is correct.** (8.EE.1) First apply quotient rule: $\frac{m^8}{m^5} = m^3$. Then multiply: $m^3 \cdot m^2 = m^{3+2} = m^5$.
- 9) **The correct answer is 24.** (8.NS.2) Calculate the factorial: $4! = 4 \times 3 \times 2 \times 1 = 24$ different arrangements.
- 10) **Choice D is correct.** (8.EE.2) $\sqrt{40}$ is irrational because 40 is not a perfect square. The others equal 5, 10, and 12 respectively.
- 11) **Choice C is correct.** (8.EE.4) $5 \times 10^3 \times 8 = (5 \times 8) \times 10^3 = 40 \times 10^3 = 4 \times 10^4$.
- 12) **Choice D is correct.** (8.EE.5) Unit price $k = \frac{30}{6} = 5$ dollars per pound.
- 13) **Choice C is correct.** (8.F.1) The total cost is determined by the number of toppings: cost = $12 + 1.50 \times$ (number of toppings). This is a function.
- 14) **Choice A is correct.** (8.EE.8) Slope = $\frac{15 - 25}{5 - 0} = \frac{-10}{5} = -2$ (in \$1000 units). In dollars: $-2 \times 1000 = -\$2000$ per year.
- 15) **Choice A is correct.** (8.EE.7) Let t = the number of years from now. Then $42 + t = 3(10 + t)$. This gives $42 + t = 30 + 3t$, so $12 = 2t$ and $t = 6$ years.
- 16) **Choice C is correct.** (8.F.1) Look up 5 hours in the table; the cost is \$55.
- 17) **Choice C is correct.** (8.G.9) Surface area of a cube = $6s^2 = 6(7)^2 = 6(49) = 294 \text{ mm}^2$. Distractors: 49 (one face only), 196 (only 4 faces), 343 (edge cubed, confusing with volume).
- 18) **Choice D is correct.** (8.G.1) Both translation and rotation are rigid transformations that preserve the shape. The figure remains a hexagon with 6 sides.
- 19) **Choice A is correct.** (8.EE.7) Subtract 1.5: $0.2x = 1$. Divide by 0.2: $x = 5$.
- 20) **Choice A is correct.** (8.EE.7) Subtract 8: $-3x < -6$. Divide by -3 (FLIP): $x > 2$.
- 21) **Choice A is correct.** (8.G.8) Dashed vertical line at $x = 1$ with shading to the LEFT means $x < 1$.
- 22) **The correct answer is A,C.** (8.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 B is correct.** (8.G.3) Reflection across the y -axis negates the x -coordinate while keeping y the same: $(x, y) \rightarrow (-x, y)$.
- 24) **Choice B is correct.** (8.G.9) Correct formula: $V = \pi r^2 h = 3.14 \times 3^2 \times 8 = 3.14 \times 9 \times 8 = 226.08 \text{ cm}^3$. Student omitted r^2 , computing $\pi r h$ instead.
- 25) **Choice C is correct.** (8.SP.3) Set $P = 500$: $500 = 3.2c - 250 \Rightarrow 3.2c = 750 \Rightarrow c = \frac{750}{3.2} \approx 234.4$. Since cakes are whole items, the bakery must sell at least 235 cakes.
- 26) **Choice D is correct.** (8.EE.8) Substitute $y = -x + 7$ into $2x + y = 10$: $2x + (-x + 7) = 10$, so $x + 7 = 10$, giving $x = 3$. Then $y = -3 + 7 = 4$. Solution: $(3, 4)$.



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 6 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. 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! |



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