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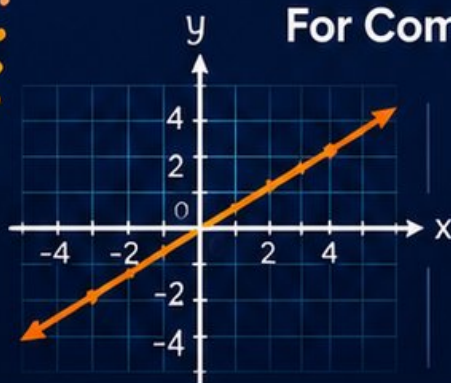
California CAASPP

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$A = \pi r^2$$

$$C = 2\pi r$$

$$V = \frac{1}{3}\pi r^2 h$$



8

 PRINTED
TESTS

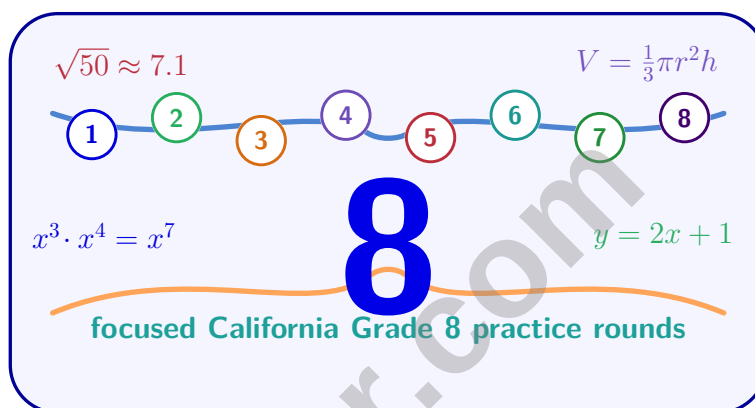
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 ONLINE
TESTS

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

8 California CAASPP Grade 8 Math Practice Tests

Targeted California Practice for Functions, Geometry, and Data Analysis



Eight 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!

Eight focused rounds for sharper CAASPP math thinking

This book gives you eight 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

An eight-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?

Eight CAASPP tests, 320 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.
Tests 7–8	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.



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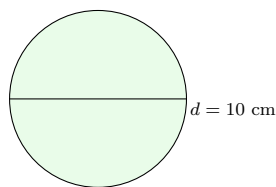
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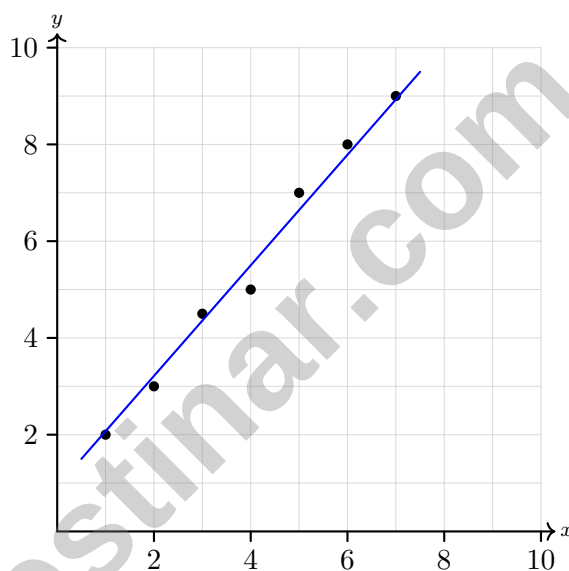
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1)

A sphere has a diameter of 10 cm. What is its approximate volume? (Use $\pi \approx 3.14$.)

☐ A. 314 cm^3
☐ C. 1046.67 cm^3
☐ B. 523.33 cm^3
☐ D. 1570.8 cm^3


2)

Which statement best explains why the trend line does NOT pass through every data point?

☐ A. The data is not perfectly linear; there is natural variation

☐ C. Some data points are too far from the line

☐ B. The trend line is drawn incorrectly

☐ D. The axes are not labeled correctly


3) A square pyramid has a base edge of 6 inches and a height of 9 inches. What is its volume?

☐ A. 54 in^3

☐ C. 162 in^3

☐ B. 108 in^3

☐ D. 324 in^3

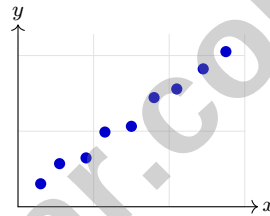
4) A hexagonal garden can be decomposed into a rectangle (12 ft by 6 ft) and two congruent isosceles right triangles (legs 6 ft each) on opposite ends. What is the total area?

☐ A. 72 ft^2

☐ C. 144 ft^2

☐ B. 108 ft^2

☐ D. 180 ft^2



5)

A scatter plot displays the relationship between temperature (in degrees Celsius) and ice cream sales (in dollars) for 12 weeks. The points show a clear upward trend from left to right. Which statement correctly describes the correlation?

☐ A. Negative correlation☐ C. No correlation☐ B. Positive correlation☐ D. Random scatter with no pattern

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6) A two-way table shows 160 athletes:

	Morning	Evening	Total
Track	50	30	80
Swim	35	45	80
Total	85	75	160

What percentage of all athletes train in the morning on the track team?

- ☐ A. 31.25% ☐ C. 58.8%
☐ B. 37.5% ☐ D. 62.5%

7) A baker tracks daily bread sales: $\{40, 45, 50, 55, 60\}$ loaves. Mean = 50. What is the MAD?

- ☐ A. 5 ☐ C. 6
☐ B. 8 ☐ D. 10

8) How many ways can 4 books be arranged on a shelf?

- ☐ A. $4 + 3 + 2 + 1 = 10$ ☐ C. $4! = 24$
☐ B. $4^4 = 256$ ☐ D. $\binom{4}{2} = 6$

9) Is $\sqrt{10}$ greater than or less than 3.1?

- ☐ A. Cannot be determined ☐ C. Equal to
☐ B. Less than ☐ D. Greater than

10) Which is the best estimate of π ?

- ☐ A. 2.14 ☐ C. 3.14
☐ B. 3.0 ☐ D. 3.5



1) A band needs to assign 3 distinct instruments to 7 musicians (each musician gets at most one). How many ways can this be done?

☐ A. $7 + 6 + 5 = 18$

☐ C. $\binom{7}{3} = 35$

☐ B. $7 \times 6 \times 5 = 210$

☐ D. $3! = 6$

2) Function through $(1, 3)$, $(2, 5)$, $(3, 7)$. Equation is?

☐ A. $y = 2x + 1$

☐ C. $y = 3x$

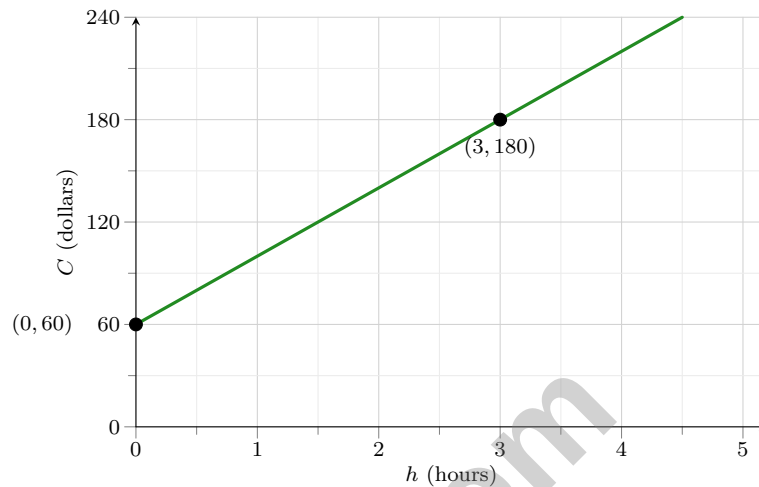
☐ B. $y = x + 2$

☐ D. $y = 2x - 1$

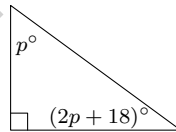
3) A holiday savings club requires \$50 monthly deposits for 12 months with no interest. What is the total saved?



- 4) A plumber charges \$60 for a service call plus \$40 per hour of labor. The graph below represents the total cost C for h hours. Which equation matches the graph?



- ☐ A. $C = 40h + 60$ ☐ C. $C = 100h$
☐ B. $C = 60h + 40$ ☐ D. $C = 40h - 60$
- 5) In a right triangle, one acute angle is $(2p + 18)^\circ$. The other acute angle is p° . Find p .



- ☐ A. 16° ☐ C. 32°
☐ B. 24° ☐ D. 40°



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1) Simplify $\frac{(k^2)^3 \cdot k^{-1}}{k^5}$.

☐ A. k^{-5}

☐ B. k^2

☐ C. k^{10}

☐ D. $k^0 = 1$

2) Triangle PQR has angles measuring 45° , 60° , and 75° . If triangle PQR is reflected across the y -axis, what are the angle measures in the reflected triangle?

☐ A. 45° , 50° , 85°

☐ B. 45° , 60° , 75°

☐ C. 30° , 60° , 90°

☐ D. 50° , 65° , 65°

3) A mortgage for \$200,000 at 4% simple interest over 30 years. What is the total interest paid?

☐ A. \$80,000

☐ B. \$120,000

☐ C. \$160,000

☐ D. \$240,000

4) Solve: $\frac{3x-6}{2} < 6$

☐ A. $x > 6$

☐ B. $x < 18$

☐ C. $x > 18$

☐ D. $x < 6$

5) Factor $9x^2 - 36$ completely.

$$\begin{array}{l} 9x^2 - 36 \\ \swarrow \\ 9(x^2 - 4) \end{array}$$

☐ A. $9(x^2 - 4)$

☐ B. $9(x - 2)(x + 2)$

☐ C. $(3x - 6)^2$

☐ D. $(x - 6)(9x + 6)$



6) Which statement correctly uses a test point to determine if $(3, 3)$ is in the solution region of $4x - 3y \geq 3$?

- ☐ A. $4(3) - 3(3) = 3$, so it is NOT in the region
- ☐ B. $4(3) - 3(3) = 3 \geq 3$ TRUE, so it IS in the region
- ☐ C. $4(3) - 3(3) = 12 \geq 3$ TRUE, so it IS in the region
- ☐ D. $4(3) - 3(3) = 0 \not\geq 3$, so it is NOT in the region

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

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

8) The line passes through $(-3, 5)$ and $(1, 13)$. Find the slope of this line.

9) Which represents a LINEAR function?

- ☐ A. $y = 9x^2 - 4$
- ☐ B. $y = -12x - 1$
- ☐ C. $y = \sqrt{3x}$
- ☐ D. $y = \frac{6}{x}$



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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 B is correct.** (8.G.9) Radius $r = 5$ cm. $V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times 3.14 \times 125 = 523.33 \text{ cm}^3$.
- 2) **Choice A is correct.** (8.SP.2) Real-world data rarely fits a perfect line. A trend line balances passing close to all points, even if it doesn't pass through every one.
- 3) **Choice B is correct.** (8.G.9) Volume of a pyramid: $V = \frac{1}{3} \cdot B \cdot h = \frac{1}{3} \times (6 \times 6) \times 9 = \frac{1}{3} \times 36 \times 9 = 108 \text{ in}^3$.
- 4) **Choice B is correct.** (8.G.7) Rectangle $= 12 \times 6 = 72 \text{ ft}^2$. Each isosceles right triangle $= \frac{1}{2} \times 6 \times 6 = 18 \text{ ft}^2$. Two triangles $= 36 \text{ ft}^2$. Total $= 72 + 36 = 108 \text{ ft}^2$.
- 5) **Choice B is correct.** (8.SP.1) An upward trend means both variables increase together, indicating positive correlation. As temperature rises (moving right), ice cream sales rise (moving up).
- 6) **Choice A is correct.** (8.SP.4) Joint frequency of morning track athletes: $\frac{50}{160} = 0.3125 = 31.25\%$.
- 7) **Choice C is correct.** (8.G.8) Absolute deviations: $|40-50| = 10$, $|45-50| = 5$, $|50-50| = 0$, $|55-50| = 5$, $|60-50| = 10$. Sum $= 30$. MAD $= 30/5 = 6$.
- 8) **Choice C is correct.** (8.NS.2) Arrange all 4 books in order: $4! = 4 \times 3 \times 2 \times 1 = 24$.
- 9) **Choice D is correct.** (8.NS.2) $(3.1)^2 = 9.61 < 10$, so $3.1 < \sqrt{10}$. Therefore $\sqrt{10} > 3.1$.
- 10) **Choice C is correct.** (8.NS.2) $\pi \approx 3.14159\dots$, commonly estimated as 3.14 or 3.2 for Grade 8 work. Distractors: A (underestimate), B (rounds down), D (rounds up).
- 11) **Choice D is correct.** (8.NS.1) Only $\sqrt{5}$ is irrational (a square root of a non-perfect square). The others are rational: $0.5 = \frac{1}{2}$, 2 is an integer, and $3.\bar{3} = \frac{10}{3}$.
- 12) **Choice D is correct.** (8.G.1) Let $x = 0.\bar{13} = 0.1333\dots$. Then $10x = 1.\bar{3}$ and $100x = 13.\bar{3}$. Subtracting: $100x - 10x = 12$, so $90x = 12$ and $x = \frac{12}{90} = \frac{2}{15}$.
- 13) **Choice C is correct.** (8.EE.3) Divide: $\frac{8 \times 10^7}{2 \times 10^5} = \frac{8}{2} \times 10^{7-5} = 4 \times 10^2 = 400$.
- 14) **The correct answer is 0.75.** (8.F.4) The coefficient of h is 0.75.
- 15) **Choice C is correct.** (8.EE.6) Perpendicular slopes are negative reciprocals. The negative reciprocal of $\frac{3}{4}$ is $-\frac{4}{3}$.
- 16) **Choice A is correct.** (8.EE.7) Multiply both sides by 3: $x + 5 = 12$. Subtract 5: $x = 7$.
- 17) **Choice D is correct.** (8.EE.8) Simplify the second equation: $2y = 2x + 4$ becomes $y = x + 2$, the same as the first equation. They represent the same line, so they intersect at infinitely many points.
- 18) **Choice A is correct.** (8.EE.7) Set up: $8h > 96$. Divide by 8: $h > 12$ hours.
- 19) **The correct answer is A, C.** (8.F.2) A: f has slope 3 and g has slope -2 ✓. B: f intercept is 2, g intercept is 5; $5 > 2$, so g is greater, not f ✗. C: Slope $3 > 0$ (increases), slope $-2 < 0$ (decreases) ✓. D: Both intercepts are positive, not negative ✗. E: $|3| = 3$ and $|-2| = 2$; f is steeper, not g ✗.
- 20) **The correct answer is 20.** (8.G.2) Let s be the length of each equal side. The perimeter is $s + s + 16 = 56$, so $2s + 16 = 56$, which gives $2s = 40$ and $s = 20$ cm.
- 21) **Choice A is correct.** (8.EE.7) FOIL: $(x + 2)(x + 6) = x^2 + 6x + 2x + 12 = x^2 + 8x + 12$.
- 22) **Choice D is correct.** (8.G.8) SOLID line (includes boundary) and shading BELOW the line indicates $y \leq 2x$.
- 23) **Choice A is correct.** (8.F.5) Diminishing returns: initial rapid gains, then slower gains, then ceiling. The slope decreases then becomes zero.
- 24) **Choice C is correct.** (8.EE.1) Addition/subtraction of powers requires like terms with same base AND exponent. $a^3 + a^2$ are not like terms.
- 25) **Choice D is correct.** (8.EE.2) $19 \times 19 = 361$, so $\sqrt{361} = 19$.
- 26) **Choice C is correct.** (8.EE.4) Volume $= (\text{side})^3 = (1.5 \times 10^{-2})^3 = (1.5)^3 \times (10^{-2})^3 = 3.375 \times 10^{-6} \text{ m}^3$.
- 27) **Choice C is correct.** (8.EE.5) Unit price $k = \frac{9.60}{8} = 1.20$ dollars per song.
- 28) **Choice C is correct.** (8.F.1) Each barcode corresponds to a product, but the price can change multiple times, giving the barcode multiple price outputs. The other options satisfy the one-input-one-output rule.



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The Power of Showing Work

Hi, Organized Solver!

◇ You practiced Grade 8 skills that often require more than one step. That means your written work matters. ◇

★ **Remember this:** Showing work is not extra. It is how you track your thinking, find errors, and prove that your answer did not happen by luck. You practiced across 8 full Grade 8 practice tests, and that repeated effort matters. ★

Organized Work Habits

- **One Line Per Step:** Keep the path readable.
- **Box the Answer:** Make the final result easy to find.
- **Use Labels:** Tell what each value represents.
- **Check the Path:** Follow your steps backward if needed.

Grade 8 test-day tip: When a problem has several steps, write less on each line. Space makes checking easier.

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

Jay Daie

Your Organized-Work Coach

PRACTICE TODAY, SUCCEED TOMORROW!

Give your child the confidence and skills they need with **8 full-length Grade 8** Math practice tests that mirror 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.



BUILD SKILLS & BOOST CONFIDENCE

Strengthen understanding and feel prepared for test day.



COVERS ALL ESSENTIAL TOPICS

- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Ratios & Proportional Relationships
- ✓ Linear Equations
- ✓ Functions
- ✓ Geometry
- ✓ Measurement & Data
- ✓ Statistics & Probability
- ✓ Pythagorean Theorem
- ✓ Volume & Surface Area
- ✓ Transformations
- ✓ Inequalities
- ✓ Data Analysis & Graphing
- ✓ And More!



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Better Results.