

KANSAS KAP

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.



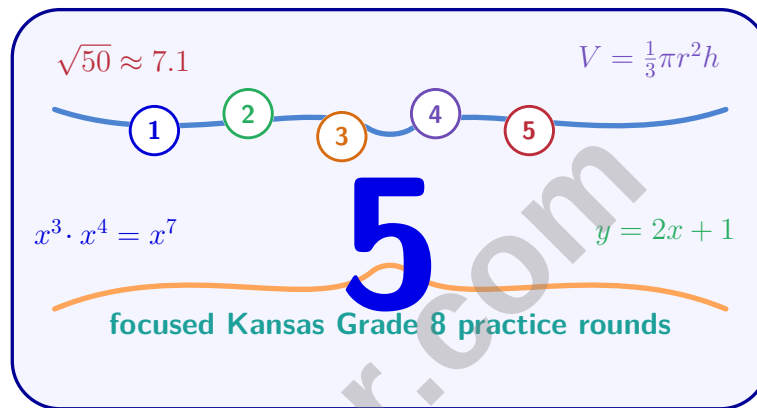
$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 Kansas KAP Grade 8 Math Practice Tests

Five KAP Rounds for Grade 8 Skills and Stamina



Five complete 40-question Grade 8 KAP 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, Kansas Grade 8 Problem Solver!

Five focused rounds for sharper KAP math thinking

This book gives you five full Grade 8 KAP 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 Kansas 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.

Kansas 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 KAP 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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& answers

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

☐ A. (0, 3)

☐ C. (1, 1)

☐ B. (3, -3)

☐ D. (2, 1)

2) What is the first difference for the sequence 5, 13, 21, 29?

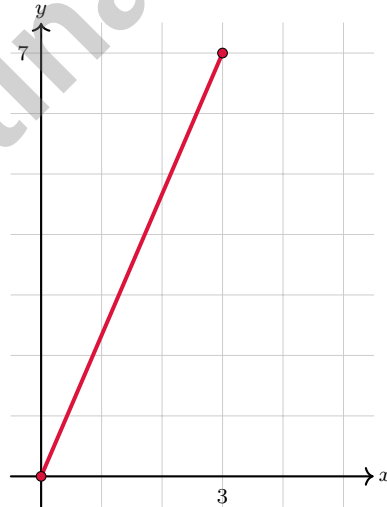
☐ A. 8 (constant, so linear)

☐ D. Cannot be determined without the x -values

☐ B. 5 (not constant, so nonlinear)

☐ C. The differences vary, so nonlinear

3) A phone company charges \$25 per month plus \$0.10 per text message. What is the total monthly cost for 100 texts?



4)

At $x = 6$, what is the value of y ?

☐ A. 12

☐ C. 14

☐ B. 13

☐ D. 15



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5) A student claims that $10x + 25$ factors as $5(2x + 5)$. Is this completely factored?

- ☐ A. Yes, this is the complete factorization.
☐ B. No; the GCF should be 10.
☐ C. No; $2x + 5$ can be factored further.
☐ D. No; a factor of 5 can still be removed.

6) A line has slope -2 . Which pair of points could lie on this line?

- ☐ A. $(1, 3)$ and $(2, 5)$
☐ B. $(0, 4)$ and $(2, 0)$
☐ C. $(1, 1)$ and $(3, 1)$
☐ D. $(2, 5)$ and $(3, 4)$

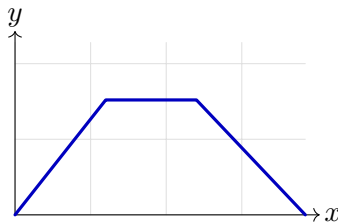
7) Maria is currently 4 years older than her sister Emma. In 3 years, Maria will be twice Emma's age. How old is Emma now?

- ☐ A. 1
☐ B. 2
☐ C. 3
☐ D. 5

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

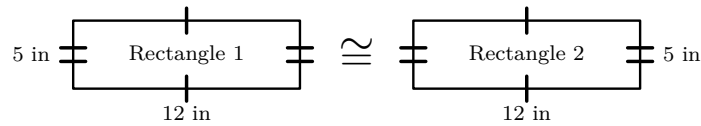
9) A graph of a function shows distance from home (in miles) vs. time. The graph rises, then is flat, then falls. Which real-world scenario matches?



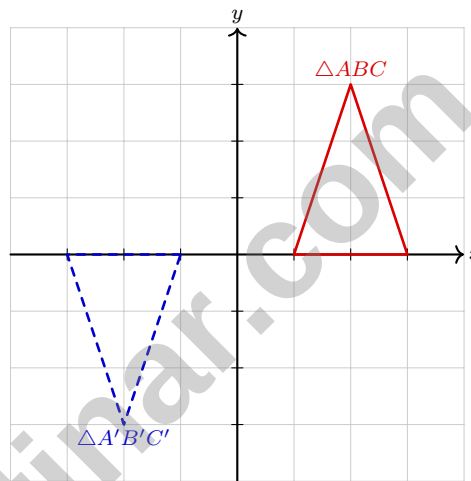
- ☐ A. Drive somewhere, stop, then drive home
☐ B. Walk faster and faster until stopping
☐ C. Stay home, then drive faster
☐ D. Drive home directly from work



- 10) Two congruent rectangles are shown. Rectangle 1 has a length of 12 inches and a width of 5 inches. What is the perimeter of Rectangle 2?



- ☐ A. 17 inches ☐ C. 34 inches
☐ B. 24 inches ☐ D. 60 inches



- 11) Triangle ABC (red) is transformed to $\triangle A'B'C'$ (dark blue). Which transformation is shown?

- ☐ A. Reflection across the y -axis ☐ C. Rotation 180°
☐ B. Rotation 90° counterclockwise ☐ D. Translation left 2, down 3



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1) What are the two factors of the constant term -12 that will correctly factor $x^2 + x - 12$?

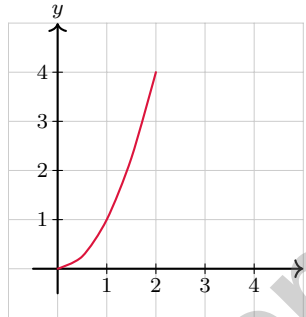
☐ A. 3 and -4

☐ C. 6 and -2

☐ B. -3 and 4

☐ D. 12 and -1

2) The graph below curves upward. Is it linear?



☐ A. Yes, because x and y are both positive

☐ C. Yes, the function is always increasing

☐ B. No, the curve is not a straight line

☐ D. No, only because it starts at the origin

3) A fitness trainer charges by the hour. Client pays \$45 for 3 hours of training. What is the hourly rate (unit rate)?

☐ A. \$12 per hour

☐ C. \$18 per hour

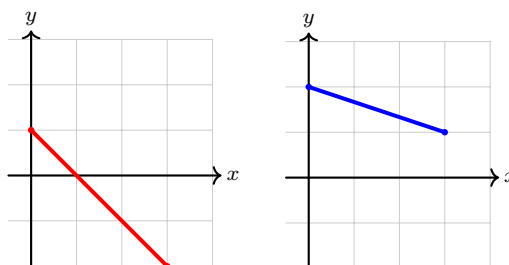
☐ B. \$20 per hour

☐ D. \$15 per hour



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4) Which graph best represents a line with slope $-\frac{1}{3}$?



- ☐ A. Red line (left) ☐ C. Both have slope $-\frac{1}{3}$
☐ B. Neither has slope $-\frac{1}{3}$ ☐ D. Blue line (right)
- 5) A father is currently 32 years older than his son. In 8 years, the father will be twice as old as the son. What is the son's current age?
- ☐ A. 16 ☐ C. 24
☐ B. 20 ☐ D. 28
- 6) The temperature $T(h)$ in degrees Celsius at height h km above sea level is $T(h) = 25 - 6h$. What is $T(2)$?
- ☐ A. 37 ☐ C. 19
☐ B. 13 ☐ D. 50



- 1) A cone has the same radius and height as a cylinder. If the cylinder's volume is 450 cubic meters, what is the cone's volume?

☐ A. 150 m^3

☐ B. 225 m^3

☐ C. 900 m^3

☐ D. 1350 m^3

- 2) A young professional has debt: credit card \$1,500 at 18% APR, student loan \$10,000 at 4% APR. In one year with no payments, approximately how much additional interest accumulates?

☐ A. \$270

☐ B. \$400

☐ C. \$670

☐ D. \$1,770

- 3) Simplify $\left(\frac{x}{y}\right)^2$ where $y \neq 0$.

☐ A. $\frac{2x}{2y}$

☐ B. $\frac{x}{y^2}$

☐ C. $\frac{x^2}{y^2}$

☐ D. $\frac{x^2}{y}$

- 4) A cube has a volume of 1000 cubic inches. What is the length of one edge?

☐ A. 9 inches

☐ B. 12 inches

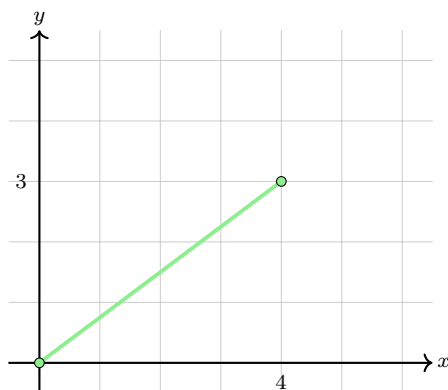
☐ C. 11 inches

☐ D. 10 inches



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5)

The equation of the line is:

☐ A. $y = 3x$

☐ B. $y = \frac{4}{3}x$

☐ C. $y = \frac{3}{4}x$

☐ D. $y = 4x$

6) Solve the system:
$$\begin{cases} y = \frac{1}{2}x + 3 \\ y = -x + 6 \end{cases}$$

☐ A. (2, 4)

☐ B. (4, 4)

☐ C. (2, 5)

☐ D. (3, 3)

7) Factor $x^2 - 13x + 42$.

☐ A. $(x - 6)(x - 7)$

☐ B. $(x - 14)(x + 1)$

☐ C. $(x - 21)(x - 2)$

☐ D. $(x - 3)(x - 14)$



Kansas KAP 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 Kansas KAP practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (8.G.9) 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.
- 2) **Choice A is correct.** (8.F.3) The differences are $13 - 5 = 8$, $21 - 13 = 8$, $29 - 21 = 8$. A constant difference of 8 indicates a linear function.
- 3) **The correct answer is \$35.** (8.F.1) Compute $25 + 0.10(100) = 35$.
- 4) **Choice C is correct.** (8.EE.4) Slope $k = \frac{7}{3}$. Equation: $y = \frac{7}{3}x$. At $x = 6$: $y = \frac{7}{3}(6) = 14$.
- 5) **Choice A is correct.** (8.G.1a) GCF of $10x$ and 25 is 5 , so $10x + 25 = 5(2x + 5)$ is completely factored (since $2x + 5$ is linear and cannot be factored further).
- 6) **Choice B is correct.** (8.EE.2) For option B, slope $= \frac{0 - 4}{2 - 0} = \frac{-4}{2} = -2$. The other choices have slopes 2, 0, and -1 .
- 7) **Choice A is correct.** (8.G.8) Let e = Emma's current age. Then Maria's age is $e + 4$. In 3 years: Emma is $e + 3$, Maria is $e + 7$. The condition gives $e + 7 = 2(e + 3)$, so $e + 7 = 2e + 6$, thus $e = 1$.
- 8) **Choice B is correct.** (8.G.11) Solve $50 + 10n = 150$ for n : subtract 50 to get $10n = 100$, so $n = 10$ weeks.
- 9) **Choice A is correct.** (8.F.5) Rising = increasing distance (driving away). Flat = constant distance (stopped). Falling = decreasing distance (returning home).
- 10) **Choice C is correct.** (8.NS.2) The perimeter of Rectangle 1 is $2(12) + 2(5) = 24 + 10 = 34$ inches. Since Rectangle 2 is congruent, it has the same perimeter: 34 inches.
- 11) **Choice C is correct.** (8.G.11) Under 180° rotation, $(x, y) \rightarrow (-x, -y)$: $(1, 0) \rightarrow (-1, 0)$, $(3, 0) \rightarrow (-3, 0)$, $(2, 3) \rightarrow (-2, -3)$.
- 12) **Choice B is correct.** (8.G.5) Sum: $(2m + 5) + (3m - 10) + (m + 35) = 180 \Rightarrow 6m + 30 = 180 \Rightarrow m = 25^\circ$. Thus angle $A = 2(25) + 5 = 55^\circ$.
- 13) **Choice B is correct.** (8.G.7, 8.G.8) Correct: $5^2 + 12^2 = 25 + 144 = 169$, so $c = 13$. The error was adding legs directly instead of applying the Pythagorean Theorem.
- 14) **The correct answer is 25.** (8.F.2) $S_X(w) = 10w$, $S_Y(w) = 50 + 8w$. Equal when $10w = 50 + 8w \Rightarrow w = 25$.
- 15) **Choice C is correct.** (8.G.9) $d = \sqrt{(13 - 1)^2 + (6 - 1)^2} = \sqrt{12^2 + 5^2} = \sqrt{144 + 25} = \sqrt{169} = 13$. (This is a 5-12-13 Pythagorean triple.)
- 16) **Choice B is correct.** (8.G.4) Corresponding angles formed by a transversal cutting parallel lines are congruent. So $n = 48^\circ$.
- 17) **Choice A is correct.** (8.G.11a) $V = \frac{1}{3} \times (2 \times 2) \times 3 = \frac{1}{3} \times 4 \times 3 = 4 \text{ m}^3 = 4000 \text{ L}$.
- 18) **Choice B is correct.** (8.G.4) Rectangle area $= 6 \times 5 = 30 \text{ m}^2$. Triangle area $= \frac{1}{2} \times 6 \times 2 = 6 \text{ m}^2$. Total $= 30 + 6 = 36 \text{ m}^2$.
- 19) **Choice D is correct.** (8.G.3) Using $\frac{(n-2) \times 180}{n} = 120$: $(n-2) \times 180 = 120n \Rightarrow 180n - 360 = 120n \Rightarrow 60n = 360 \Rightarrow n = 6$ (hexagon).
- 20) **The correct answer is -2 .** (8.F.4) A descent means the rate of change is negative, so the slope is -2 .
- 21) **Choice B is correct.** (8.SP.1) The downward trend shows negative correlation: as exercise increases, resting heart rate decreases. This is a typical physiological response.
- 22) **The correct answer is B,D.** (8.F.2) Option A is false: identical equations create the same line (infinitely many solutions). Option B is true: parallel lines never intersect. Option C is false: lines with different slopes intersect once. Option D is true: all points on the line satisfy both equations. Option E is false: perpendicularity means the lines meet at a right angle, so they still have one solution.
- 23) **Choice B is correct.** (8.SP.3) This is a row-conditional frequency. Girls in sports $= 120 - 72 = 48$. Relative to sports players only: $\frac{48}{120} = \frac{2}{5}$.
- 24) **Choice B is correct.** (8.G.9) Deviations: $|2 - 6| = 4$, $|4 - 6| = 2$ (twice), $|6 - 6| = 0$ (three times), $|8 - 6| = 2$ (twice), $|10 - 6| = 4$. Sum $= 4 + 4 + 0 + 4 + 4 = 16$. MAD $= 16/9 \approx 1.78$.
- 25) **The correct answer is 20.** (8.SP.3) Set $C = 210$: $210 = 50 + 8c \Rightarrow 8c = 160 \Rightarrow c = 20$ classes.



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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



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