

10 Kansas KAP

GRADE
8
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

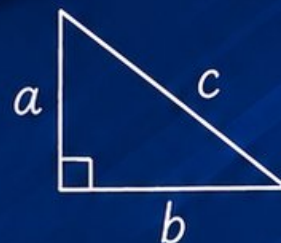
10 PRINTED
TESTS



2 ONLINE
TESTS



- ✓ Build Confidence
- ✓ Master Key Math Skills
- ✓ Answer Explanations for Every Question
- ✓ Test-Taking Strategies That Work



$$y = mx + b$$



$$3x - 7 = 2(x + 5)$$
$$x = 17$$

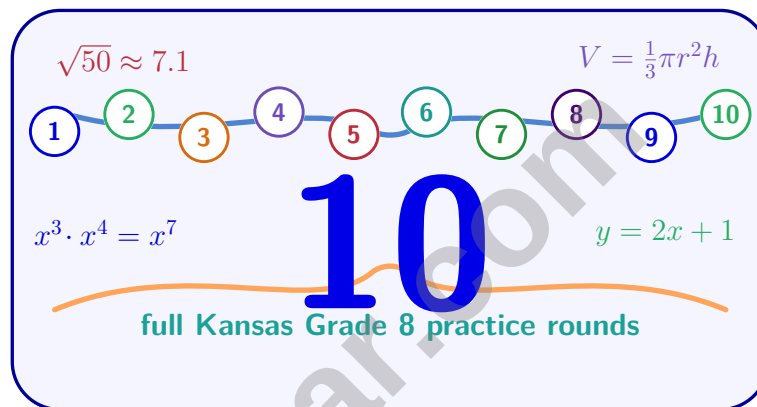


USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.

10 Kansas KAP Grade 8 Math Practice Tests

Kansas Grade 8 KAP Practice for wide-open practice for functions, equations, transformations, angle reasoning, data analysis, and chance



Ten complete 40-question Grade 8 KAP practice rounds with linear relationships, scientific notation, real numbers, equations, functions, 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!

Ten focused rounds for sharper Kansas KAP math thinking

This book gives you ten full Grade 8 KAP math practice tests. Each round is built to help you notice structure, compare quantities, use linear reasoning, handle real numbers, and explain your thinking with care.

Grade 8 standards focus: This page supports **Reading Function Values** (8.G.11): Find outputs from a function rule, table, or graph. A second useful connection is **Probability of Simple and Compound Events** (8.G.8): Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

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 ten-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 a proportion, equation, diagram, number line, 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.

Grade 8 standards focus: Keep the routine connected to **Building Linear Functions** (8.F.4): Construct a function to model a linear relationship between two quantities. Determine rate of change and initial value from a description, table, or graph. It also prepares you for **Estimating Expressions with Irrational Numbers** (8.NS.2): Estimate the value of expressions involving irrational numbers (e.g., π^2).

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?

Ten Kansas KAP tests, 400 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Linear relationships, integer exponents, scientific notation, real-number reasoning, and careful reading.
Tests 4–6	Expressions, equations, inequalities, transformations, geometry, and multi-step problem solving.
Tests 7–9	Data analysis, probability, mixed review, stamina, and choosing efficient strategies.
Test 10	A final Kansas round to show growth across the whole book.
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.

Grade 8 standards focus: Use these habits while practicing **Congruent Figures** (8.NS.2): Understand that a two-dimensional figure is congruent to another if the second can be obtained by a sequence of rotations, reflections, and translations. Another recurring target is **Graphing Proportional Relationships** (8.EE.4): Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.



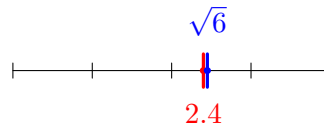
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Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	32
★ Practice Test 3	_____	47
★ Practice Test 4	_____	64
★ Practice Test 5	_____	82
★ Practice Test 6	_____	97
★ Practice Test 7	_____	112
★ Practice Test 8	_____	127
★ Practice Test 9	_____	142
★ Practice Test 10	_____	158
Practice Test Answer Keys	_____	174
Practice Test Answers and Explanations	_____	180

Perfect Squares: $2^2 = 4$, $3^2 = 9$

Compare to $\sqrt{6}$ and 2.4



1)

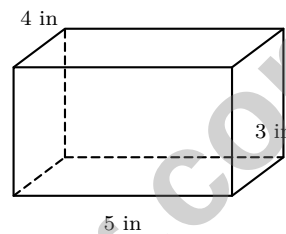
Is $\sqrt{6}$ greater than 2.4 or less than 2.4?

☐ A. Cannot compare

☐ C. Equal to

☐ B. Less than

☐ D. Greater than



2)

A rectangular prism has dimensions 5 inches $\times$ 4 inches $\times$ 3 inches. If you wrap a ribbon around only the four vertical sides (not the top or bottom), how much area is covered?

☐ A. 12 in^2

☐ C. 54 in^2

☐ B. 24 in^2

☐ D. 94 in^2

3) A cone has radius 9 cm and height 14 cm. Approximately, what is its volume? (Use $\pi \approx 3.14$.)

☐ A. 594.12 cm^3

☐ C. 2373.84 cm^3

☐ B. 1186.92 cm^3

☐ D. 1782.36 cm^3



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4) Which value of x satisfies $x^2 = 100$?

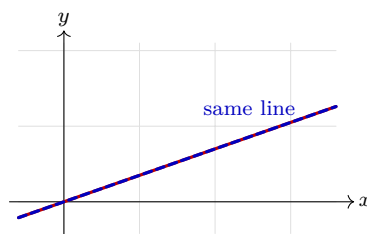
☐ A. 8

☐ C. 10

☐ B. 9

☐ D. 11

5) Two lines on a coordinate plane are identical (the same line). How many solutions does the system have?



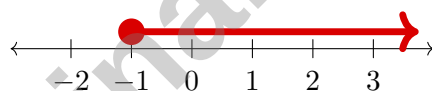
☐ A. No solution

☐ C. Exactly two solutions

☐ B. Exactly one solution

☐ D. Infinitely many solutions

6) Which graph represents $x \geq -1$?



☐ A. Open circle at -1 , ray left

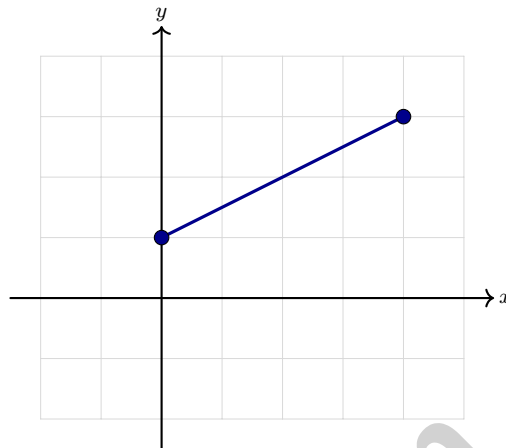
☐ C. Closed circle at -1 , ray right

☐ B. Open circle at -1 , ray right

☐ D. Closed circle at 0 , ray right



7) What is the domain of the graphed function?


☐ A. $\{0, 1, 2, 3, 4\}$
☐ B. $[0, 4]$
☐ C. $\{1, 3\}$
☐ D. All real numbers

8) Plant X : $H(d) = 2d + 10$ cm. Plant Y at days 0, 5, 10 has heights 15, 20, 25 cm. Which started taller?

☐ A. Plant X
☐ B. Plant Y
☐ C. Both same.

☐ D. Cannot be determined.

9) A taxi charges \$3 to get in the car plus \$0.50 per mile driven. If d represents the distance in miles and C represents the cost in dollars, which equation models this situation?

☐ A. $C = 0.50d + 3$
☐ B. $C = 3d + 0.50$
☐ C. $C = 3.50d$
☐ D. $C = 0.50d - 3$


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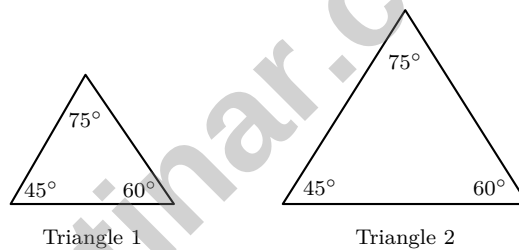
- 1) In a survey of 250 voters, 120 voted yes on a proposition and 130 voted no. If 75 of the yes-voters are women, what is the relative frequency of men among yes-voters as a percent?

☐ A. 37.5% ☐ C. 62.5%
☐ B. 30% ☐ D. 48%

- 2) 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

- 3) Two triangles both have angles measuring 45° , 60° , and 75° . Are these triangles necessarily similar?



☐ A. No, the sides must also be proportional ☐ C. Yes, angles alone determine similarity (AAA)
☐ B. No, only two angles are given ☐ D. Only if the triangles are congruent

- 4) The table shows a function. Find $f(0)$.

x	-1	0	1	2
$f(x)$	2	3	4	5

☐ A. 3 ☐ C. 4
☐ B. 2 ☐ D. 0



5) What is $0.\overline{111}$ as a fraction?

- ☐ A. $\frac{1}{111}$
☐ B. $\frac{111}{100}$

- ☐ C. $\frac{111}{1000}$
☐ D. $\frac{111}{999} = \frac{1}{9}$

6) Which is a rational number?

- ☐ A. $\sqrt{11}$
☐ B. $\sqrt{20}$

- ☐ C. $\sqrt{49}$
☐ D. $\sqrt{23}$

7) Simplify and estimate $\sqrt{5} \times \sqrt{20}$.

- ☐ A. Exactly 5
☐ B. Approximately 11.2

- ☐ C. Approximately 7.1
☐ D. Exactly 10

8) You invest \$4,000 in a 3-year CD (Certificate of Deposit) at 3% simple interest. What is your final amount?

- ☐ A. \$4,120
☐ B. \$4,180

- ☐ C. \$4,240
☐ D. \$4,360

9) Which value is equivalent to 7.5×10^6 ?

- ☐ A. 7.5,000
☐ B. 750,000

- ☐ C. 75,000,000
☐ D. 7,500,000

10) A square pyramid-shaped roof covers a building with a square base of side length 10 m. The slant height is 13 m. What is the lateral surface area (the four triangular sides)?

- ☐ A. 130 m^2
☐ B. 260 m^2

- ☐ C. 360 m^2
☐ D. 520 m^2



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1) A line has y -intercept -2 and is perpendicular to $y = 4x + 3$. What is its equation?

☐ A. $y = -4x - 2$

☐ C. $y = \frac{1}{4}x - 2$

☐ B. $y = 4x - 2$

☐ D. $y = -\frac{1}{4}x - 2$

2) Which of these functions is LINEAR?

☐ A. $y = 4x^2 - 1$

☐ C. $y = \frac{2}{x+3}$

☐ B. $y = 10x - 6$

☐ D. $y = 3^x$

3) A parking meter charges \$2.50 initial fee plus \$0.75 per hour. What is the hourly rate?

4) 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

☐ C. \$1.20

☐ B. \$1.10

☐ D. \$1.30

5) Factor $x^2 + 2x - 8$.

☐ A. $(x + 4)(x - 2)$

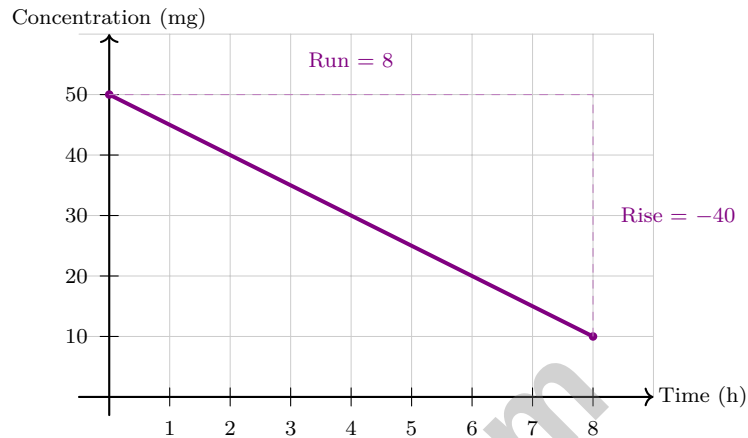
☐ C. $(x - 2)(x - 4)$

☐ B. $(x + 2)(x - 4)$

☐ D. $(x + 1)(x + 8)$



- 6) A graph shows medication concentration (mg) in the bloodstream versus time (hours). The line passes through $(0, 50)$ and $(8, 10)$.



What is the slope?

- ☐ A. -5 mg/h ☐ C. 5 mg/h
☐ B. $-\frac{1}{2}$ mg/h ☐ D. $\frac{1}{2}$ mg/h
- 7) Two rectangular fields have the same width. The first field is 50 m long and has a perimeter of 180 m. The second field is 60 m long and has a perimeter of 200 m. What is the width?
- ☐ A. 20 m ☐ C. 40 m
☐ B. 30 m ☐ D. 50 m
- 8) A function is increasing on the interval $[0, 3]$, then constant on $[3, 6]$, then decreasing on $[6, 9]$. On which interval does the maximum occur?



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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.NS.2)** $(2.4)^2 = 5.76 < 6$, so $2.4 < \sqrt{6}$. Therefore $\sqrt{6}$ is greater than 2.4.
- 2) **Choice C is correct.** **(8.G.10)** Lateral surface area (four vertical sides) = $2(5)(3) + 2(4)(3) = 30 + 24 = 54 \text{ in}^2$.
- 3) **Choice B is correct.** **(8.G.8)** $V = \frac{1}{3}\pi r^2 h = \frac{1}{3} \times 3.14 \times 81 \times 14 = \frac{1}{3} \times 3560.76 = 1186.92 \text{ cm}^3$.
- 4) **Choice C is correct.** **(8.EE.1)** $10 \times 10 = 100$, so $x = 10$ (taking the positive root).
- 5) **Choice D is correct.** **(8.F.2)** When two equations represent the same line, every point on that line is a solution to the system. Therefore, there are infinitely many solutions.
- 6) **Choice C is correct.** **(8.EE.7)** The inequality $x \geq -1$ includes -1 (closed circle) and all values greater (ray points right).
- 7) **Choice B is correct.** **(8.F.1)** The segment starts at $x = 0$ and ends at $x = 4$. The domain includes all x -values in this range: $[0, 4]$.
- 8) **Choice B is correct.** **(8.F.2)** X at day 0: 10 cm. Y at day 0: 15 cm. Since $15 > 10$, Y started taller.
- 9) **Choice A is correct.** **(8.F.4)** Initial fee is \$3 (intercept), rate per mile is \$0.50 (slope). Equation: $C = 0.50d + 3$.
- 10) **Choice A is correct.** **(8.F.5)** The elevator goes down (negative slope), pauses (flat line), then up (positive slope). This is a piecewise linear function with three distinct segments.
- 11) **Choice C is correct.** **(8.NS.2)** Using the Pythagorean Theorem on Triangle 1: $c^2 = 6^2 + 8^2 = 36 + 64 = 100$, so $c = 10$ m. Triangle 2 is congruent, so its hypotenuse is also 10 m.
- 12) **Choice A is correct.** **(8.G.5)** Co-interior angles (same-side interior angles) are supplementary: $124 + y = 180$, so $y = 56^\circ$.
- 13) **Choice C is correct.** **(8.G.7, 8.G.8)** Check C: $7^2 + 9^2 = 49 + 81 = 130 \neq 121 = 11^2$. All others satisfy the Pythagorean Theorem (A: 9-12-15 is 3-4-5 scaled by 3; B: 6-8-10 is 3-4-5 scaled by 2; D: 20-21-29 is a Pythagorean triple).
- 14) **Choice D is correct.** **(8.G.4)** A linear pair of angles is supplementary. So the other angle is $180 - 42 = 138^\circ$.
- 15) **Choice B is correct.** **(8.G.11a)** Correct volume: $V = \frac{1}{3} \times (5^2) \times 12 = \frac{1}{3} \times 25 \times 12 = 100 \text{ m}^3$. The student missed both the squaring and the $\frac{1}{3}$ factor.
- 16) **Choice B is correct.** **(8.G.4)** Decompose: rectangle and semicircle. Rectangle area = $10 \times 4 = 40 \text{ ft}^2$. Semicircle has diameter 4 ft, so radius $r = 2$ ft. Semicircle area = $\frac{1}{2}\pi r^2 = \frac{1}{2} \times 3.14 \times 2^2 = 6.28 \text{ ft}^2$. Total = $40 + 6.28 = 46.28 \text{ ft}^2$.
- 17) **Choice B is correct.** **(8.G.3)** The sum of interior angles in a quadrilateral is 360° . So $D = 360 - 85 - 95 - 100 = 80^\circ$.
- 18) **Choice B is correct.** **(8.SP.1)** A U-shaped curve represents a nonlinear relationship. The direction changes, so it is not a simple linear correlation.
- 19) **Choice B is correct.** **(8.SP.3)** The data shown covers speeds 1–5 mph. Predicting at 60 mph is extreme extrapolation, where the linear model's assumptions break down.
- 20) **The correct answer is \$600.** **(8.G.8)** $50 \times 12 = \$600$.
- 21) **Choice C is correct.** **(8.EE.4)** $y = 12x$. For $x = 3.5$: $y = 12(3.5) = 42$ dollars.
- 22) **The correct answer is B,E.** **(8.G.8)** There are 10 marbles total. B is true because $P(\text{blue}) = \frac{3}{10}$. E is true because $P(\text{red or blue}) = \frac{5+3}{10} = \frac{8}{10} = \frac{4}{5}$. A is false because $P(\text{red}) = \frac{1}{2}$. C is false because $P(\text{green}) = \frac{1}{5}$. D is false because $P(\text{yellow}) = 0$.
- 23) **Choice A is correct.** **(8.G.1a)** FOIL: $(x + 7)(x - 1) = x^2 - x + 7x - 7 = x^2 + 6x - 7$.
- 24) **Choice B is correct.** **(8.F.3)** First differences: $8 - 5 = 3$, $12 - 8 = 4$, $17 - 12 = 5$. Non-constant differences indicate nonlinear growth.
- 25) **Choice B is correct.** **(8.G.11)** Reflection across the x -axis maps $(x, y) \rightarrow (x, -y)$. So $(2, 2) \rightarrow (2, -2)$, giving y -coordinate -2 .
- 26) **Choice A is correct.** **(8.G.9)** $c = \sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$. (This is a 9-12-15 triple, a multiple of 3-4-5.)
- 27) **Choice B is correct.** **(8.G.9)** Mean = 6. Absolute deviations: $|2-6| = 4$, $|4-6| = 2$, $|6-6| = 0$, $|8-6| = 2$, $|10-6| = 4$. Sum = 12. MAD = $12/5 = 2.4$.
- 28) **Choice D is correct.** **(8.EE.2)** The change is -4 degrees (dropping) over 2 hours. Slope = $\frac{-4}{2} = -2$ degrees per hour.



Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. This full-length book gave you ten complete Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 8 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

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

Jay Daie

Your Review Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **10** full-length Math practice tests and **2** online tests to help Grade 8 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.



THIS BOOK INCLUDES:

10

Full-Length
Printed Tests

2

Online
Practice Tests



Detailed Answers
& Explanations



**MORE PRACTICE.
GREATER RESULTS.**

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



**Build
Confidence**

Practice regularly to feel prepared and test-ready.



**Master
Key Skills**

Develop strong math skills and problem solving abilities.



**Improve
Understanding**

Learn with clear explanations and step-by-step solutions.



**Test
Strategies**

Learn proven strategies to approach every question with confidence.



**Boost
Performance**

Apply your knowledge and achieve your best score!

TOPICS COVERED

- | | |
|---------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Data Analysis |
| ✓ Inequalities | ✓ Measurement |
| ✓ Functions | ✓ Pythagorean Theorem |
| ✓ Geometry | ✓ Surface Area & Volume |
| ✓ Ratios & Proportions | ✓ And More! |



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY