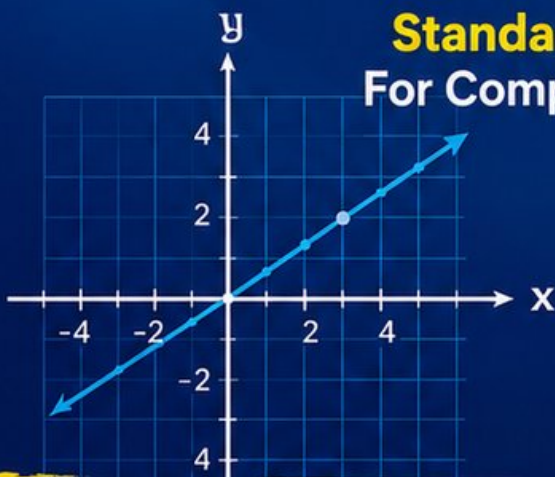
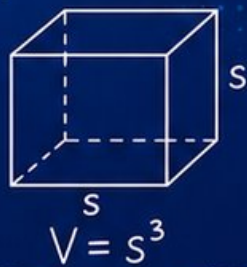


9 Kansas KAP Grade 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$2x + 3y = 12$$
$$y = mx + b$$



**9 PRINTED
TESTS**

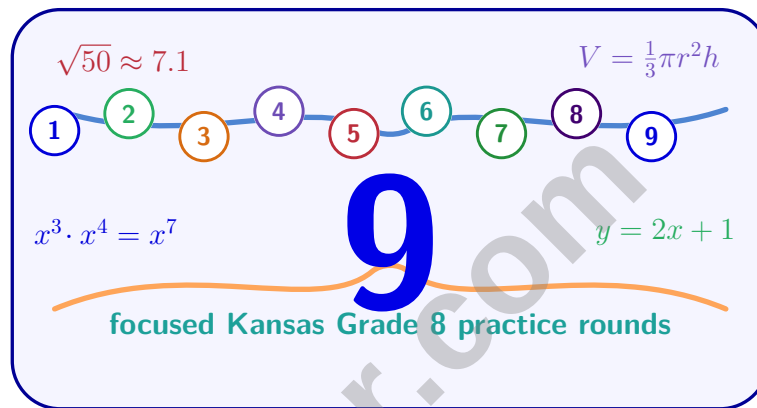


**2 ONLINE
TESTS**

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

9 Kansas KAP Grade 8 Math Practice Tests

Standards-Aligned Kansas Practice for Functions, Geometry, Data, and Equations



Nine 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



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Kansas Grade 8 Problem Solver!

Nine focused rounds for sharper KAP math thinking

This book gives you nine 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 nine-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?

Nine KAP tests, 360 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 7–9	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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	30
★ Practice Test 3	_____	45
★ Practice Test 4	_____	61
★ Practice Test 5	_____	77
★ Practice Test 6	_____	94
★ Practice Test 7	_____	110
★ Practice Test 8	_____	126
★ Practice Test 9	_____	142
Practice Test Answer Keys	_____	159
Practice Test Answers and Explanations	_____	165

1) Trapezoid $PQRS$ is similar to Trapezoid $TUVW$ with scale factor $\frac{3}{2}$. If $PQ = 8$ cm in trapezoid $PQRS$, what is the length of TU in trapezoid $TUVW$?

☐ A. 12 cm

☐ C. 8 cm

☐ B. 5.33 cm

☐ D. 10.67 cm

2) Rewrite $3x - 2y < 6$ in slope-intercept form. Which inequality is equivalent?

☐ A. $y > \frac{3}{2}x - 3$

☐ C. $y \geq \frac{3}{2}x - 3$

☐ B. $y < \frac{3}{2}x - 3$

☐ D. $y \leq \frac{3}{2}x - 3$

3) Two figures are related by a 90° counterclockwise rotation about the origin. If the pre-image has a side parallel to the x -axis, what is true about the corresponding side in the image?

☐ A. It is also parallel to the x -axis

☐ C. It forms a 45° angle with the axes

☐ B. It is parallel to the y -axis

☐ D. Its length becomes half

4) Which is the best estimate of $\pi\sqrt{2}$?

☐ A. 2.8

☐ C. 4.4

☐ B. 3.1

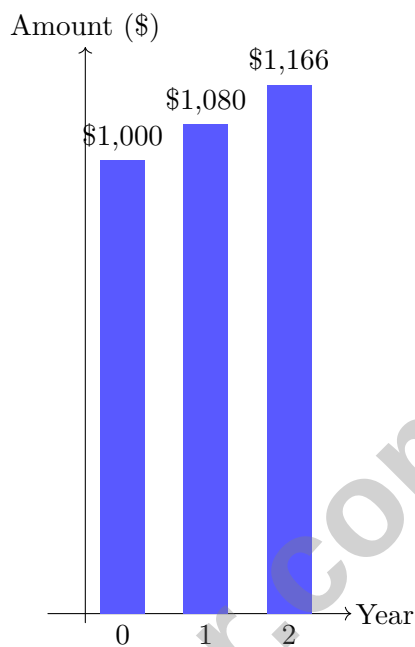
☐ D. 6.3

5) Write 4.7×10^{-4} in decimal (standard) form.



Scan me!
For more practice
& answers

- 6) An investment grows with compound interest. If \$1,000 is invested at 8% compound interest annually, which is the closest to the amount after 2 years?



- ☐ A. \$1,080
- ☐ B. \$1,160
- ☐ C. \$1,166
- ☐ D. \$1,200
- 7) Simplify $\frac{12a^6b^{-2}}{3a^2b^3}$.
- ☐ A. $4a^8b$
- ☐ B. $9a^4b^5$
- ☐ C. $\frac{12a^8}{b^6}$
- ☐ D. $4a^4b^{-5}$ or $\frac{4a^4}{b^5}$



- 8) 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 ☐ C. 0.5 kilotons
☐ B. 5×10^1 kilotons ☐ D. 8×10^{23} kilotons
- 9) A line passes through (1, 3) and has slope -1 . What is the y -intercept?
- ☐ A. 2 ☐ C. -1
☐ B. 3 ☐ D. 4
- 10) What is the solution to $6(x + 2) = 30$?
- ☐ A. $x = 3$ ☐ C. $x = 8$
☐ B. $x = 5$ ☐ D. $x = -2$
- 11) Solve:
$$\begin{cases} 5x - 2y = 4 \\ 2x + y = 7 \end{cases}$$
- ☐ A. (1, 2) ☐ C. (1.2, 1)
☐ B. (2, 1) ☐ D. (2, 3)
- 12) A phone plan charges \$20 base plus \$0.10 per text. If you budget at most \$35, which inequality shows max texts?
- ☐ A. $0.10t + 20 > 35$ ☐ C. $0.10 + 20t \geq 35$
☐ B. $20t + 0.10 \leq 35$ ☐ D. $0.10t + 20 \leq 35$



Scan me!
For more practice
& answers

1) A data set has residuals: $-3, 2, -1, 4, -2$. Which statement is true?

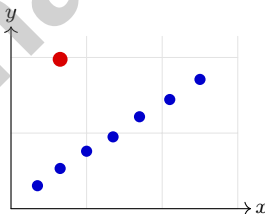
- ☐ A. The sum of residuals is 5
☐ B. The mean absolute residual (MAD) is 2.4
☐ C. All points lie exactly on the trend line
☐ D. The trend line is a poor fit because some residuals are negative

2) A square pyramid has a base edge of 1.5 m and a height of 10 m. What is its volume? (Use $1.5^2 = 2.25$.)

- ☐ A. 7.5 m^3
☐ B. 11.25 m^3
☐ C. 22.5 m^3
☐ D. 33.75 m^3

3) A shape consists of a large triangle (base 16 ft, height 10 ft) with a smaller triangle (base 8 ft, height 5 ft) cut out from its center. What is the remaining area?

- ☐ A. 30 ft^2
☐ B. 40 ft^2
☐ C. 60 ft^2
☐ D. 80 ft^2



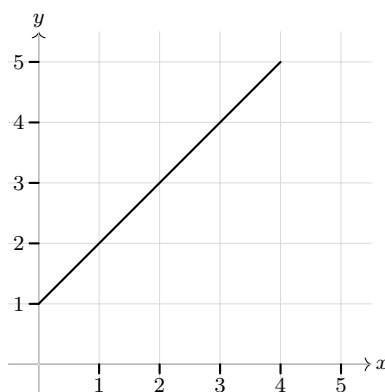
4)

A medical study plots patient age (years) versus cholesterol level (mg/dL). The scatter plot shows a moderate positive correlation with most points clustered near a trend line. However, one 35-year-old has a cholesterol level of 280 mg/dL, while most 35-year-olds in the study have levels near 200 mg/dL. A doctor should:

- ☐ A. Investigate this outlier for potential health risks or data errors
☐ B. Ignore it because the overall trend is clear
☐ C. Remove it to improve the correlation coefficient
☐ D. Use it to predict all 35-year-olds' cholesterol levels



Scan me!
For more practice
& answers



5)

What is the slope of the line shown in the graph?

☐ A. $\frac{1}{2}$

☐ C. 1

☐ B. 2

☐ D. 4.5

6) A bag contains 7 red marbles and 3 blue marbles. If two marbles are drawn without replacement, what is the probability that the first is red AND the second is blue?

☐ A. $\frac{3}{10}$

☐ C. $\frac{21}{100}$

☐ B. $\frac{7}{30}$

☐ D. $\frac{7}{90}$

7) 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. $\binom{4}{2} = 6$

8) Two classes have the same mean test score of 75. Class A has MAD = 3, and Class B has MAD = 8. What does this tell us?

☐ A. Class B has higher individual scores

☐ C. Class A has more consistent scores

☐ B. Class A has more students

☐ D. Class B performed better overall


1) A regular polygon has an interior angle of 162° . How many sides does it have?

☐ A. 18

☐ C. 22

☐ B. 20

☐ D. 25

2) A cylindrical paint can has radius 2.5 feet and height 3 feet. The paint covers only the curved side (lateral surface), not the top or bottom. Which expression gives the area that needs paint?

☐ A. $2\pi(2.5)^2 + 2\pi(2.5)(3)$

☐ C. $\pi(2.5)^2 + \pi(2.5)(3)$

☐ B. $2\pi(2.5)(3)$

☐ D. $(2.5)(3)$

3) How many solutions does the system $\begin{cases} y = \frac{1}{2}x + 1 \\ y = \frac{1}{2}x + 4 \end{cases}$ have? Explain why.

4) Three solids have the same radius $r = 2$ cm. A cylinder with height 6 cm, a cone with height 6 cm, and a sphere. Rank them by volume from smallest to largest. (Use $\pi \approx 3.14$.)

☐ A. Cone, Sphere, Cylinder

☐ C. Cylinder, Sphere, Cone

☐ B. Sphere, Cone, Cylinder

☐ D. Cone, Cylinder, Sphere

5) Simplify $\sqrt{16} \times \sqrt{25}$.

☐ A. $\sqrt{41}$

☐ C. $\sqrt{200}$

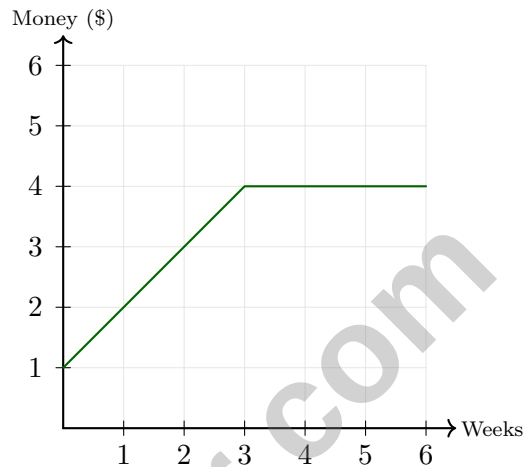
☐ B. 40

☐ D. 20



6) A student claims the line through $(1, 3)$ and $(3, 6)$ has slope $\frac{2}{3}$. What error did the student make?

- ☐ A. Inverted the slope as $\frac{\Delta x}{\Delta y}$
☐ C. Used $(1, 3)$ twice
☐ B. Subtracted incorrectly
 ☐ D. Used the y -intercept as the slope



7)

A student saves money over time. The graph shows: increases for 3 weeks, then constant for 3 weeks. The y -intercept is 1. Which is true?

- ☐ A. The student had \$0 at the start
 ☐ C. The student spends money after week 3
☐ B. The student had \$1 initially and saves \$1 per week, then stops
 ☐ D. The function is linear over all 6 weeks



Scan me!
For more practice
& answers

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.



Scan me!
For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **(8.G.1b)** Scale factor from $PQRS$ to $TUVW$ is $\frac{3}{2}$. So $TU = PQ \times \frac{3}{2} = 8 \times 1.5 = 12$ cm.
- 2) **Choice A is correct.** **(8.G.9)** Subtract $3x$ from both sides: $-2y < -3x + 6$. Divide by -2 (flip inequality): $y > \frac{3}{2}x - 3$.
- 3) **Choice B is correct.** **(8.EE.6)** A 90° rotation turns horizontal lines vertical. A side parallel to the x -axis becomes parallel to the y -axis. Rotations preserve length and angles between sides.
- 4) **Choice C is correct.** **(8.NS.2)** $\pi \approx 3.14$ and $\sqrt{2} \approx 1.41$, so $3.14 \times 1.41 \approx 4.43$.
- 5) **The correct answer is 0.00047.** **(8.EE.2)** Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 6) **Choice C is correct.** **(8.G.8)** $A = 1000(1.08)^2 = 1000 \times 1.1664 = \$1,166.40 \approx \$1,166$.
- 7) **Choice D is correct.** **(8.EE.2)** Coefficients: $\frac{12}{3} = 4$. Variables: $a^{6-2} = a^4$ and $b^{-2-3} = b^{-5}$. Result: $4a^4b^{-5}$ or $\frac{4a^4}{b^5}$.
- 8) **Choice C is correct.** **(8.EE.3)** Divide: $\frac{2 \times 10^{12}}{4 \times 10^{12}} = \frac{2}{4} \times 10^0 = 0.5 \times 10^0 = 0.5$ kilotons.
- 9) **Choice D is correct.** **(8.G.9)** Using $y = mx + b$: $3 = -1(1) + b$, so $3 = -1 + b$, thus $b = 4$.
- 10) **Choice A is correct.** **(8.EE.7)** Distribute: $6x + 12 = 30$. Subtract 12: $6x = 18$. Divide by 6: $x = 3$.
- 11) **Choice D is correct.** **(8.F.2)** Check $(2, 3)$: $5(2) - 2(3) = 10 - 6 = 4$ and $2(2) + 3 = 7$. So the solution is $(2, 3)$.
- 12) **Choice D is correct.** **(8.EE.7)** Base (20) plus texts at 0.10 each (0.10 t), total at most 35.
- 13) **Choice B is correct.** **(8.F.2)** Plan A base cost: \$15. Plan B at $m = 0$: \$20. Since $20 > 15$, Plan B is higher.
- 14) **Choice B is correct.** **(8.F.4)** In $h = mt + b$, the slope $m = 2$ represents the rate of change: 2 cm per week. The number 15 is the initial height (intercept).
- 15) **Choice B is correct.** **(8.NS.2)** Congruent figures have equal corresponding sides. The side corresponding to PQ in pentagon $UVWXY$ is UV , and it must equal 8 cm.
- 16) **Choice B is correct.** **(8.G.5)** Alternate exterior angles are congruent: $7k - 3 = 5k + 17 \implies 2k = 20 \implies k = 10$.
- 17) **Choice A is correct.** **(8.G.7, 8.G.8)** Correct calculation: $10^2 + 10^2 = 100 + 100 = 200$, so $c = \sqrt{200} = \sqrt{100 \cdot 2} = 10\sqrt{2} \approx 14.14$. The student added the legs directly instead of using the Pythagorean Theorem.
- 18) **Choice C is correct.** **(8.EE.1)** $15 \times 15 = 225$, so $\sqrt{225} = 15$.
- 19) **Choice D is correct.** **(8.EE.4)** Slope = $\frac{\Delta y}{\Delta x} = \frac{15-0}{5-0} = 3$. For a proportional line through the origin, the slope equals the unit rate.
- 20) **Choice A is correct.** **(8.G.1a)** $(x-3)^2 = (x-3)(x-3) = x^2 - 3x - 3x + 9 = x^2 - 6x + 9$.
- 21) **The correct answer is A,B.** **(8.G.9)** Using the Pythagorean Theorem, $9^2 + 40^2 = 81 + 1600 = 1681$, so the hypotenuse is $\sqrt{1681} = 41$ units. C is false because $9 + 40 = 49$, not 41. D is false because the squares of the legs are needed. E is false because $41 > 40$.
- 22) **Choice B is correct.** **(8.F.1)** Base fare is \$5. Charge per mile is \$3. Total charge = $3m + 5$.
- 23) **Choice C is correct.** **(8.F.3)** $y = \frac{1}{x^2}$ is a reciprocal function with x in the denominator, making it nonlinear. All others are linear.
- 24) **Choice A is correct.** **(8.F.5)** From $x = -1$ to $x = 1$: the function is constant at $f(x) = 2$ (neither increasing nor decreasing). From $x = 1$ to $x = 3$: the function increases from 2 to 4. From $x = 3$ onward: the function decreases.
- 25) **Choice A is correct.** **(8.G.11)** Reverse the translation: $(x, y) \rightarrow (x + 6, y - 4)$. So $P = (1 + 6, 8 - 4) = (7, 4)$.
- 26) **The correct answer is 7.1.** **(8.NS.1)** Since $7^2 = 49$ and $7.1^2 = 50.41$, we have $\sqrt{50}$ between 7.0 and 7.1, closer to 7.1. More precisely, $7.07^2 \approx 49.98 \approx 50$. To the nearest tenth, $\sqrt{50} \approx 7.1$.
- 27) **Choice D is correct.** **(8.G.3)** Each interior angle: $\frac{(30-2) \times 180}{30} = \frac{28 \times 180}{30} = \frac{5040}{30} = 168^\circ$.
- 28) **Choice A is correct.** **(8.SP.3)** Column-conditional frequency among public-transit users: $\frac{84}{108} = \frac{7}{9} \approx 0.78$.
- 29) **Choice A is correct.** **(8.EE.2)** Using $(2, 60)$ and $(5, 150)$: slope = $\frac{150 - 60}{5 - 2} = \frac{90}{3} = \30 per session.



Scan me!
For more practice
& answers

You Are Building Test Stamina

Hi, Stamina Builder!

◇ This high-stamina book gave you nine substantial Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 8 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

Your Test-Stamina Coach

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

Help your child excel in math with **9 full-length Grade 8 practice tests** designed to reflect real test formats and cover all key math standards.

With a wide variety of questions and real-world applications, this book builds the skills and confidence students need to achieve their best!



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 | ✓ 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! |



2 Extra Online Practice Tests Included!

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

testinar.com/math8



PRACTICE. PREPARE. SUCCEED.



Testinar

More Practice. More Confidence.
Better **Results.**