

6 KANSAS KAP

GRADE

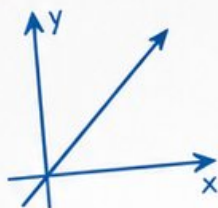
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED
TESTS



2 ONLINE
TESTS



USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



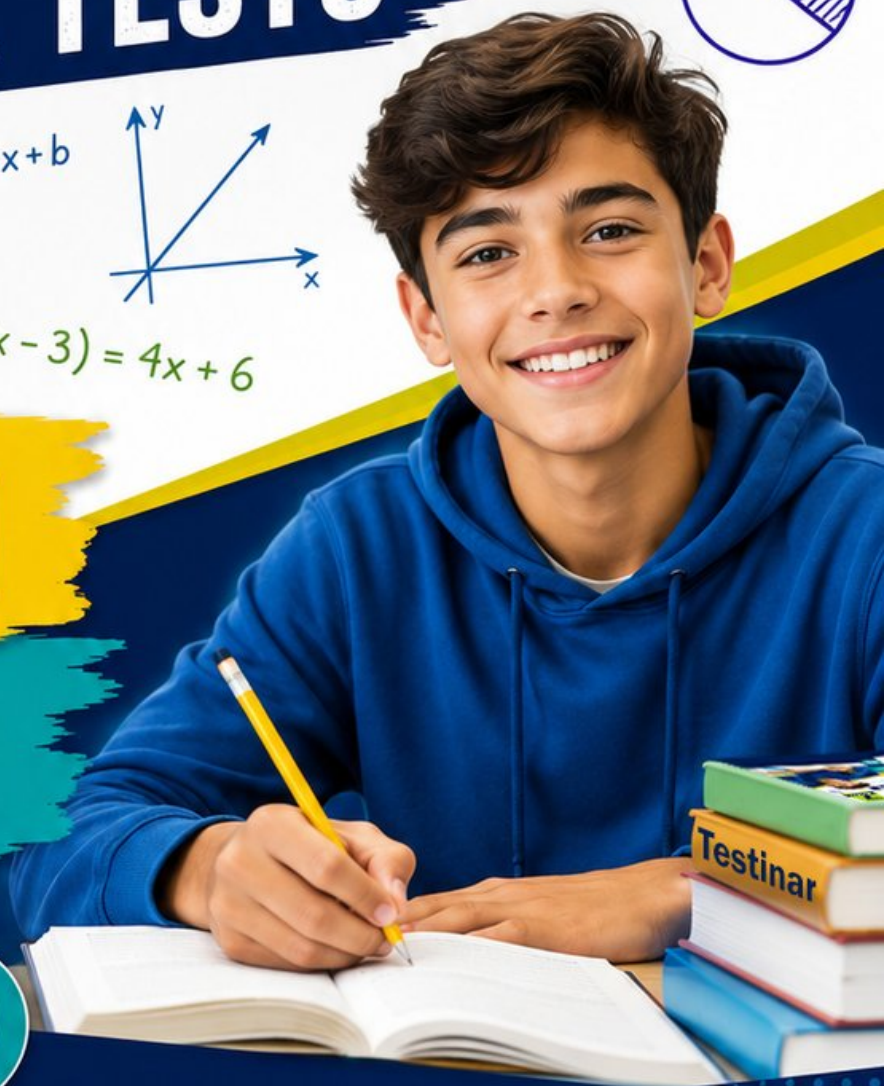
Strengthen
Math Skills



Detailed Answers
& Explanations

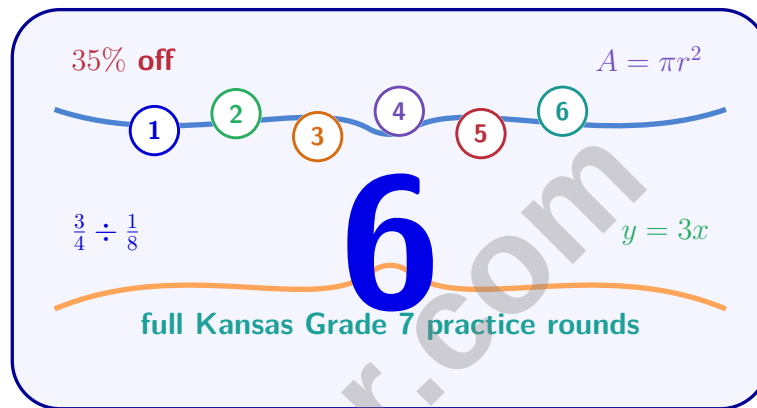


Improve Test
Performance



6 Kansas KAP Grade 7 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Six complete 40-question Grade 7 KAP practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Kansas Grade 7 Problem Solver!

Six focused rounds for sharper KAP math thinking

This book gives you six full Grade 7 KAP math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, 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 six-session plan for confident Grade 7 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.

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?

Six KAP tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 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 measure describes how spread out data is?

☐ A. Mean

☐ C. Range

☐ B. Median

☐ D. Mode

2) Solve: $-2x - 7 = 1$

$$-2x - 7 = 1$$



Add 7

$$-2x = 8$$



Divide by -2

$$x = -4$$

☐ A. $x = -4$

☐ C. $x = 2$

☐ B. $x = -2$

☐ D. $x = 4$

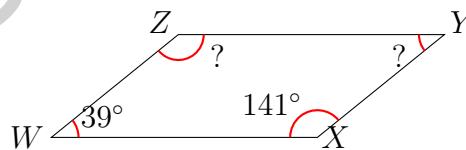
3) A store sells apples at \$2.50 per pound. The relationship between pounds (p) and cost (c) is proportional. Write the equation.

☐ A. $c = p + 2.5$

☐ C. $p = 2.5c$

☐ B. $c = 2.5 + p$

☐ D. $c = 2.5p$



4)

What is the sum of the two missing angle measures?

☐ A. 90°

☐ C. 180°

☐ B. 141°

☐ D. 219°



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- 5) Two supplementary angles are in the ratio 3 : 7. What is the measure of the larger angle in degrees?

- 6) A fitness center wants to know about its members' exercise habits. It surveys members only during evening hours when most people are at the gym. What is this sampling bias called?

☐ A. Stratified bias

☐ C. Measurement bias

☐ B. Selection bias

☐ D. Convenience sampling

- 7) A number cube is labeled with the numbers 1, 2, 2, 3, 3, 3. When rolled, what is the probability of rolling a 3?

☐ A. $\frac{1}{3}$

☐ C. $\frac{2}{3}$

☐ B. $\frac{1}{2}$

☐ D. $\frac{1}{6}$

- 8) A student picks a shirt (Red, Blue, or Green) and shoes (Sneakers or Boots). How many outfits are possible?

☐ A. 5

☐ C. 8

☐ B. 6

☐ D. 9

- 9) A cylinder has a surface area of 427.04 m^2 and a radius of 5 m. What is the height? Use $\pi \approx 3.14$.

☐ A. 8 m

☐ C. 12 m

☐ B. 10 m

☐ D. 15 m



- 10) A scatter plot shows the relationship between the price of a bicycle (x-axis, in dollars) and the number sold per month (y-axis). The points show a downward trend. What does this suggest?
- ☐ A. Expensive bikes never sell ☐ C. Price and sales are unrelated
☐ B. Lower-priced bikes tend to sell more ☐ D. The store should lower all prices
- 11) Three students each flip a coin. What is the probability that all three get heads?
- ☐ A. $\frac{1}{2}$ ☐ C. $\frac{3}{8}$
☐ B. $\frac{1}{8}$ ☐ D. $\frac{1}{4}$
- 12) Two histograms display daily smartphone usage (in hours) for teenagers and adults. Teenagers: concentrated at 5–7 hours per day. Adults: concentrated at 2–4 hours per day. Based on the visuals, what is a valid inference?
- ☐ A. Teenagers typically use smartphones 3–4 hours more daily ☐ C. Both groups use smartphones equally
☐ B. Adults never use smartphones ☐ D. Smartphone use depends on screen size, not age
- 13) A point (a, b) is rotated 180° about the origin, resulting in $(6, -3)$. Write (a, b) .



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1) Which probability best matches the phrase “even chance”?

☐ A. 0.2

☐ C. 0.8

☐ B. 0.5

☐ D. 0.9

2) A student’s test score improved from 72 to 90. What is the percent increase in the score?

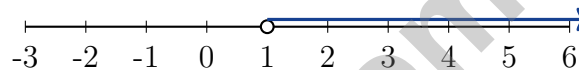
☐ A. 18%

☐ C. 25%

☐ B. 20%

☐ D. 80%

3) Which inequality matches this number line?



☐ A. $x \leq 1$

☐ C. $x > 1$

☐ B. $x \geq 1$

☐ D. $x < 1$

4) In a simulation of drawing colored balls from a bag, which change would improve the reliability of the probability estimate?

☐ A. Using a smaller bag

☐ C. Using fewer colors

☐ B. Performing more trials

☐ D. Replacing the bag after each trial

5) A dot plot displays the number of hours students exercise per week: 2, 2, 3, 3, 3, 4, 4, 4, 4, 5, 5, 6. What is the mode of the data?



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6) In a school, 30% of students play soccer and 25% play basketball. If 5% play both, what is the probability a student plays soccer OR basketball?

☐ A. 0.55

☐ C. 0.40

☐ B. 0.50

☐ D. 0.35

7) A scientist estimated the density of a liquid at 1.2 g/mL but the actual density was 1.5 g/mL. What is the percent error?

☐ A. 30%

☐ C. 80%

☐ B. 25%

☐ D. 20%

8) A student expanded $-2(x - 3)$ as $-2x - 6$. The diagram below shows the correct distribution. What is the correct answer?

$$\begin{array}{rcc}
 & -2(x - 3) & \\
 & \downarrow & \\
 -2 \cdot x & & -2 \cdot (-3) \\
 \downarrow & & \downarrow \\
 -2x & & +6 \\
 & \text{negative} \times \text{negative} = \text{positive} & \\
 -2x + 6 & &
 \end{array}$$

☐ A. $-2x + 6$
☐ C. $2x - 6$
☐ B. $-2x - 6$
☐ D. $2x + 6$

9) A grocery store owner borrows \$12000 for renovations at 9.5% simple interest for 4 years. What is the total repayment amount?

☐ A. \$12950

☐ C. \$17400

☐ B. \$19200

☐ D. \$16560

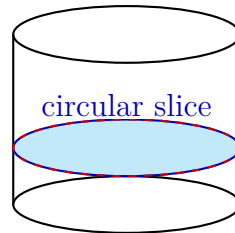

1) A shirt costs \$24 and is on sale for 25% off. What is the sale price?

☐ A. \$6

☐ C. \$18

☐ B. \$12

☐ D. \$20



$$r = 3 \text{ cm}$$

2)

A cylinder with radius 3 cm and height 6 cm is sliced horizontally at a height of 1 cm from the bottom. What is the area of the circular cross-section?

☐ A. $3\pi \text{ cm}^2$

☐ C. $12\pi \text{ cm}^2$

☐ B. $9\pi \text{ cm}^2$

☐ D. $18\pi \text{ cm}^2$

3) Angle M is complementary to angle N . If $N = 36^\circ$, what is the measure of angle M ?

☐ A. 36°

☐ C. 54°

☐ B. 44°

☐ D. 144°

4) Two similar figures have a linear scale factor of 2 : 3. If the larger figure has a perimeter of 36 inches, what is the perimeter of the smaller figure?

☐ A. 18 inches

☐ C. 24 inches

☐ B. 20 inches

☐ D. 54 inches



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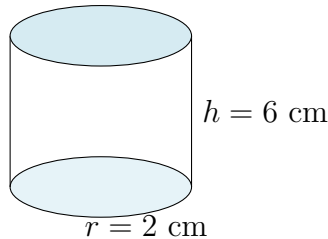
5) A circle has an area of 28.26 square inches. What is its diameter? Use $\pi \approx 3.14$.

☐ A. 3 inches

☐ C. 9 inches

☐ B. 6 inches

☐ D. 18 inches



6)

What is the volume of the cylinder shown? Use $\pi \approx 3.14$.

☐ A. 37.68 cm³

☐ C. 75.36 cm³

☐ B. 50.24 cm³

☐ D. 150.72 cm³

7) A line plot shows the number of goals scored by 15 soccer players this season:

Goals | 2 2 3 3 3 4 4 4 4 5 5 6 6 7 9

Which statement best describes the data?

☐ A. The data shows a uniform distribution with all scores equally common

☐ C. All players scored at least 2 goals, with the median at 4

☐ B. Most players scored between 3 and 5 goals, with one outlier at 9

☐ D. The mode is 4 goals, appearing 4 times



Kansas KAP Grade 7 Practice Test Answer Keys**How to use this section with a Grade 7 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 C is correct.** (7.SP.1-7.SP.4) Range (max – min) measures how spread out data is. Mean, median, and mode measure center, not spread.
- 2) **Choice A is correct.** (7.EE.3-7.EE.4) Add 7: $-2x = 8$. Divide by -2 : $x = -4$.
- 3) **Choice D is correct.** (7.RP.1-7.RP.3) Proportional relationship: cost equals constant times pounds. Form is $y = kx$, so $c = 2.5p$.
- 4) **Choice C is correct.** (7.G.1-7.G.5) A quadrilateral's angles sum to 360° . The known angles add to $39^\circ + 141^\circ = 180^\circ$, so the two missing angles must add to 180° .
- 5) **The correct answer is 126.** (7.G.1-7.G.5) Let angles be $3k$ and $7k$. Then $3k + 7k = 180$, so $10k = 180$ and $k = 18$. Larger angle is $7(18) = 126^\circ$.
- 6) **Choice D is correct.** (7.SP.1-7.SP.4) Sampling only during evening hours is convenient for the surveyor but misses members who visit at other times, introducing convenience bias.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) Three faces show 3. Total faces: 6. $P(\text{rolling } 3) = \frac{3}{6} = \frac{1}{2}$.
- 8) **Choice B is correct.** (7.SP.5-7.SP.8) Shirts: 3; shoes: 2. By the counting principle: $3 \times 2 = 6$ outfits.
- 9) **Choice B is correct.** (7.G.4-7.G.6) $SA = 2\pi r^2 + 2\pi rh \Rightarrow 427.04 = 2(3.14)(25) + 2(3.14)(5)(h) \Rightarrow 427.04 = 157 + 31.4h \Rightarrow h = 10$ m.
- 10) **Choice B is correct.** (7.SP.1-7.SP.4) A downward trend means that as price increases, sales tend to decrease. This is a negative association, not a guarantee or causal statement.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{HHH}) = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$.
- 12) **Choice A is correct.** (7.SP.3) Histogram centers show typical usage. Teenagers average 5–7 hours vs. adults at 2–4 hours. The difference is approximately 3–4 hours more for teenagers on average.
- 13) **The correct answer is $(-6, 3)$.** (7.G.1-7.G.5) A 180° rotation about the origin uses the rule $(a, b) \rightarrow (-a, -b)$. If the image is $(6, -3)$, then $(-a, -b) = (6, -3)$, so $a = -6$ and $b = 3$. Thus the original point is $(a, b) = (-6, 3)$.
- 14) **Choice B is correct.** (7.SP.6) Experimental probability = $\frac{\text{observed outcomes}}{\text{total trials}} = \frac{36}{80} = 0.45$. This is close to the theoretical probability of 0.5, showing how observed results approximate expected outcomes.
- 15) **Choice A is correct.** (7.SP.5-7.SP.8) Blue sections = 2 out of 8 total. Probability = $\frac{2}{8} = \frac{1}{4}$.
- 16) **Choice C is correct.** (7.RP.3) Estimate 1: $\frac{72-80}{80} \times 100\% = 10\%$. Estimate 2: $\frac{88-80}{80} \times 100\% = 10\%$. Both estimates are equally far from the actual value (8 units away).
- 17) **Choice C is correct.** (7.EE.1-7.EE.2) Distribute 3 to both terms: $3(x) + 3(5) = 3x + 15$.
- 18) **Choice D is correct.** (7.RP.3) The correct calculation is $600 \times 0.04 \times 2 = 48$, not 4.8. Since $0.04 \times 2 = 0.08$, $600 \times 0.08 = \$48$. The student moved the decimal point one place too far to the left.
- 19) **Choice D is correct.** (7.NS.1-7.NS.3) $0 - 5 = 0 + (-5) = -5$. Subtracting 5 from 0 gives -5 .
- 20) **The correct answer is B,C.** (7.G.1-7.G.5) B and C are equivalent and correct: two angles are equal (50° each), so by the Isosceles Triangle Theorem, the sides opposite those angles must be equal. A is wrong (equilateral requires all angles 60°). D is wrong (two angles are the same).
- 21) **Choice D is correct.** (7.RP.1-7.RP.3) Convert to same units: $16 \text{ m} = 1600 \text{ cm}$. Scale = $2 : 1600 = 1 : 800$.
- 22) **Choice C is correct.** (7.RP.3) 50% is half; half of 200 is 100.
- 23) **Choice D is correct.** (7.RP.3) Discount = $\frac{1}{3} \times 150 = \50 . Final price = $150 - 50 = \$100$.
- 24) **Choice A is correct.** (7.NS.1b) When adding two negative numbers, add their absolute values and keep the negative sign: $|-6| + |-4| = 10$, so $-6 + (-4) = -10$.
- 25) **Choice A is correct.** (7.EE.1) Combine like terms by variable: $(3 - 1)x + (4 + 1)y + (2 - 1)z = 2x + 5y + z$.
- 26) **Choice B is correct.** (7.EE.1-7.EE.2) Find GCF of 8, 12, 16, 24. Factors of 8: 1, 2, 4, 8. Factors of 12: 1, 2, 3, 4, 6, 12. Factors of 16: 1, 2, 4, 8, 16. Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24. The GCF of all four is 4.
- 27) **The correct answer is 14.** (7.G.4-7.G.6) $C = 2\pi r \Rightarrow 88 = 2 \times \frac{22}{7} \times r \Rightarrow 88 = \frac{44}{7}r \Rightarrow r = 88 \times \frac{7}{44} = 14$ cm.
- 28) **Choice A is correct.** (7.EE.4b) "A number" is n ; "is more than" is $>$; "twice itself minus 5" is $2n - 5$. Direct translation: $n > 2n - 5$.



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Hi, Persistent Problem Solver!

◇ Some Grade 7 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 6 full Grade 7 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 7 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!

This book includes **6** full-length Math practice tests and **2** online tests to help Grade 7 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:

6 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.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Improve Understanding

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



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost Performance

Apply your knowledge and achieve your best score!

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ 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!



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