

6

KENTUCKY KSA

GRADE

7

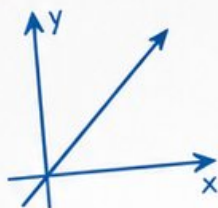
MATH

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



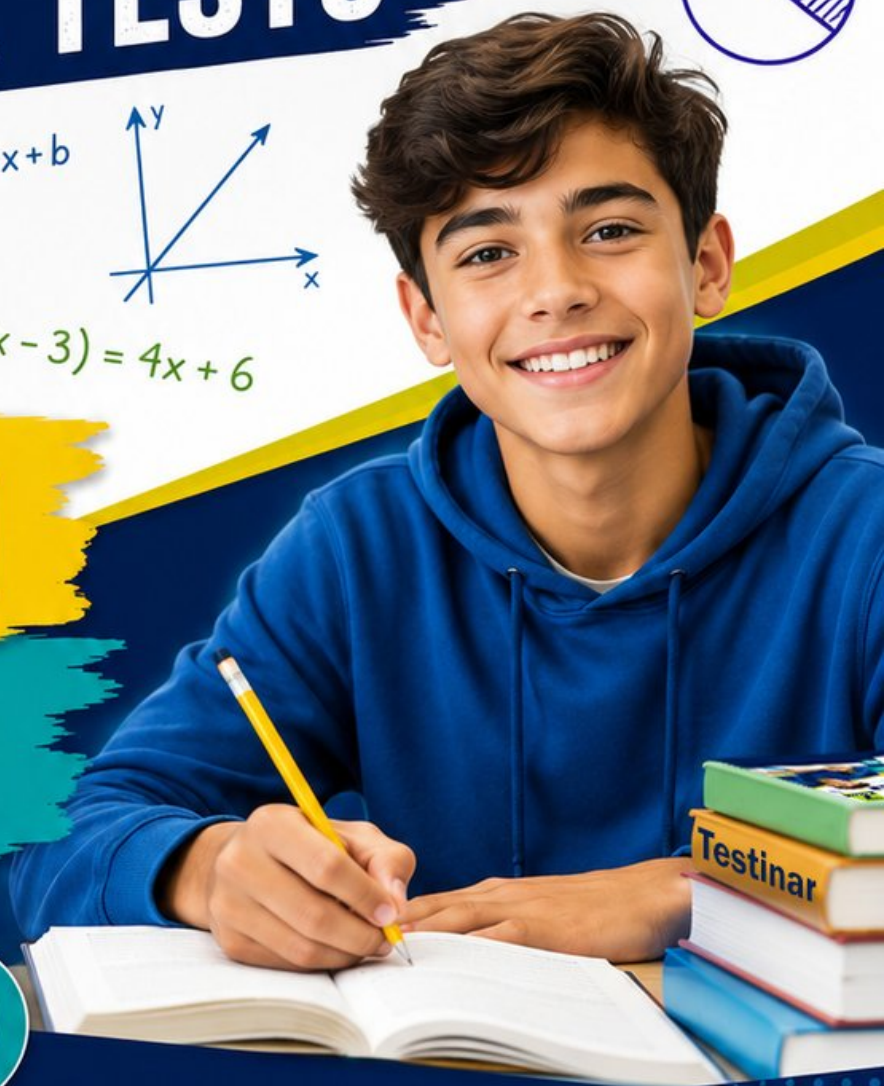
Strengthen
Math Skills



Detailed Answers
& Explanations

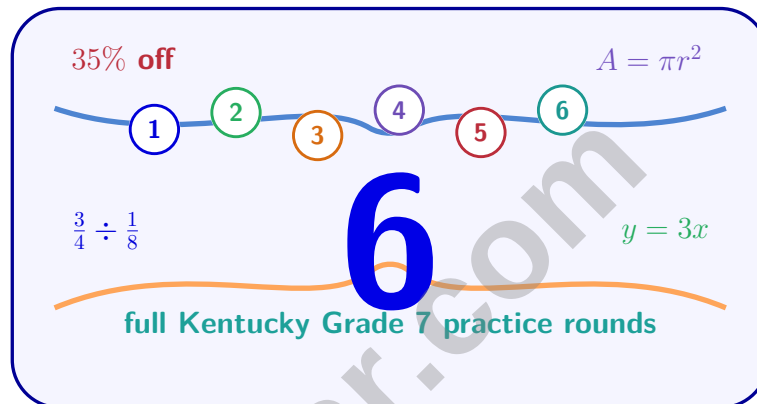


Improve Test
Performance



6 Kentucky KSA Grade 7 Math Practice Tests

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



Six complete 40-question Grade 7 KSA 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, Kentucky Grade 7 Problem Solver!

Six focused rounds for sharper KSA math thinking

This book gives you six full Grade 7 KSA 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 Kentucky 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.

Kentucky 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 KSA 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.



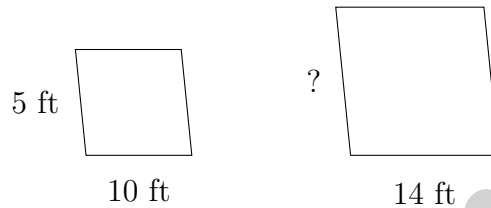
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- 1) If 52% of a school's 650 students are girls, which is the most efficient method to find the number of girls?

- ☐ A. Divide 650 by 52 ☐ C. Add $52 + 650$ and take $\frac{1}{2}$
☐ B. Use a proportion: $\frac{52}{100} = \frac{x}{650}$ and cross-multiply ☐ D. Convert 52% to a decimal and multiply: 0.52×650



2)

The parallelograms are similar. The first has a height of 5 ft and a base of 10 ft. The second has a base of 14 ft. What is the height of the second parallelogram?

- 3) Solve for x : $2(x - 7) = 2x - 14$

- ☐ A. $x = 0$ only ☐ C. All real numbers
☐ B. $x = 7$ only ☐ D. No solution

- 4) A recipe scales proportionally. The base recipe uses $\frac{1}{3}$ cup sugar for every $\frac{2}{3}$ cup flour. What is the constant of proportionality (flour per sugar)?

- ☐ A. $k = \frac{1}{2}$ ☐ C. $k = \frac{2}{3}$
☐ B. $k = \frac{3}{2}$ ☐ D. $k = 2$



- 5) A simulation is designed to estimate the probability of getting exactly two tails in three coin flips. What is the theoretical probability that the simulation should approach?
- ☐ A. $\frac{1}{8}$ ☐ C. $\frac{3}{8}$
☐ B. $\frac{2}{8}$ ☐ D. $\frac{4}{8}$
- 6) A quality-control manager randomly selects 100 items from a production line of 5000 items. The 5000 items is the _____.
- ☐ A. sample ☐ C. population
☐ B. parameter ☐ D. statistic
- 7) Two spinners are spun. The first spinner has sections labeled 1, 2, and 3. The second spinner has sections labeled A and B. How many outcomes are in the sample space?
- ☐ A. 5 ☐ C. 8
☐ B. 6 ☐ D. 9
- 8) What does MAD (Mean Absolute Deviation) measure?
- ☐ A. The average distance of data points from the mean ☐ C. The most frequently occurring value
☐ B. The middle value in an ordered dataset ☐ D. The difference between max and min
- 9) A dot plot shows the number of hours 10 students studied for a math test. The data is: 1, 1, 1, 2, 2, 2, 2, 3, 4, 5. What is the median?
- ☐ A. 1 hour ☐ C. 3 hours
☐ B. 2 hours ☐ D. 5 hours



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- 10) A circular clock face has circumference 88 cm. Using $\pi \approx \frac{22}{7}$, what is the radius of the clock?

- 11) A box contains tiles labeled with numbers 2, 4, 6, 8, 10, 12, 14, 16. A tile is drawn at random. What is the probability of drawing a number greater than 8?

☐ A. $\frac{1}{2}$
☐ B. $\frac{5}{8}$

☐ C. $\frac{3}{8}$
☐ D. $\frac{1}{4}$

- 12) Two number cubes are rolled. What is the probability of rolling doubles (both dice show the same number)?

☐ A. $\frac{1}{6}$
☐ B. $\frac{7}{36}$

☐ C. $\frac{1}{12}$
☐ D. $\frac{5}{36}$

- 13) A charity conducted a phone survey calling 500 households. 340 people answered and agreed to participate. Based on this experimental data, what is the probability that a randomly called household will answer and agree?

☐ A. $\frac{340}{500}$
☐ B. $\frac{17}{50}$

☐ C. 0.32
☐ D. $\frac{160}{500}$



- 1) The stem-and-leaf plot displays class test scores:

Stem	Leaves
7	2, 5, 8, 8
8	1, 3, 5, 6, 9
9	0, 2, 4, 7

What is the median score?

- ☐ A. 85 ☐ C. 83
☐ B. 84 ☐ D. 82
- 2) A student has a probability of 0.2 of being late to school. Out of 50 school days, how many days should the student expect to NOT be late?

- 3) What is the rule for reflecting a point over the line $y = -x$?
- ☐ A. $(x, y) \rightarrow (y, x)$ ☐ C. $(x, y) \rightarrow (-x, -y)$
☐ B. $(x, y) \rightarrow (-y, -x)$ ☐ D. $(x, y) \rightarrow (y, -x)$
- 4) An electronics store has a clearance sale offering 35% off all items. If a laptop is originally \$1 200, what is the sale price?

- ☐ A. \$420 ☐ C. \$835
☐ B. \$1 035 ☐ D. \$780



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5) A bag contains letters spelling PROBABILITY. If one letter is drawn at random, what is the probability of drawing a B OR a Y?

☐ A. $\frac{2}{11}$
☐ B. $\frac{3}{11}$

☐ C. $\frac{4}{11}$
☐ D. $\frac{1}{11}$

6) A baker estimated 120 cups of flour were needed, but the recipe actually required 100 cups. What is the percent error?

☐ A. 83.3%
☐ B. 16.7%

☐ C. 22.2%
☐ D. 20%

7) Expand: $\frac{1}{4}(8b - 12)$

☐ A. $2b - 3$
☐ B. $2b - 12$

☐ C. $8b - 3$
☐ D. $2b - 4$

8) A jacket has a sale price of \$45 after a 10% discount. What was the original price?

☐ A. \$49.50
☐ B. \$54

☐ C. \$40.50
☐ D. \$50

9) Maya deposits \$1200 into a savings account with a simple interest rate of 4% per year. How much interest will she earn after 2 years?

☐ A. \$48
☐ B. \$240

☐ C. \$144
☐ D. \$96

10) What is $0 - 5$?

☐ A. 5
☐ B. 10

☐ C. 0
☐ D. -5



1) A phone company's annual revenue comes from \$100 in fixed service charges and \$50 per month. Which equation represents total annual revenue R in dollars?

☐ A. $R = 50(12) + 100$

☐ B. $R = 100 + 50(12)$

☐ C. $R = 50m + 100$ where $m = 12$ months

☐ D. $R = 100(12) + 50$

2) A student found the area of a circle with radius 5 cm and got 31.4 cm^2 . What error did the student make? Use $\pi \approx 3.14$.

☐ A. Used the diameter instead of radius☐ C. Used πd instead of πr^2 ☐ B. Used circumference formula $2\pi r$ instead of area☐ D. Computed 3.14×5 instead of 3.14×5^2

3) A can of juice has a cylindrical shape with radius 3 inches and height 6 inches. Approximately how many cubic inches of juice can the can hold? Use $\pi \approx 3.14$.

☐ A. 56.52 in^3

☐ C. 169.56 in^3

☐ B. 113.04 in^3

☐ D. 339.12 in^3

4) Two triangles both have side lengths 5, 5, and 7. How many corresponding side lengths match?



- 5) Two datasets both have median 100 and IQR 20. Dataset P has mean 105. Dataset Q has mean 95. Without seeing the actual data, what can you infer?
- ☐ A. Both datasets are symmetric ☐ C. The two datasets are identical
- ☐ B. Dataset P has high outliers pulling the mean above the median; Dataset Q has low outliers ☐ D. Cannot infer anything about skewness
- 6) A bag contains 35 marbles. The probability of drawing a specific color is $\frac{5}{7}$. How many marbles of that color are in the bag?
- ☐ A. 5 ☐ C. 25
- ☐ B. 15 ☐ D. 30
- 7) Which expression is equivalent to $0.98x$?
- ☐ A. $x + 0.98x$ ☐ C. $0.98 + x$
- ☐ B. $x - 0.02x$ ☐ D. $0.02x - x$
- 8) Two box plots compare the monthly rainfall in two regions. Region P: Min 1 inch, Q1 3, Median 5, Q3 7, Max 9 inches. Region Q: Min 0 inches, Q1 2, Median 4, Q3 9, Max 12 inches. Which region has more variable weather?
- ☐ A. Region P (all measures are higher) ☐ C. Both regions have identical patterns
- ☐ B. Region Q (larger range and spread) ☐ D. Region P is more variable
- 9) A card is drawn from a standard deck. What is the probability of drawing a king OR a queen?
- ☐ A. $\frac{4}{52}$ ☐ C. $\frac{2}{52}$
- ☐ B. $\frac{2}{13}$ ☐ D. $\frac{1}{26}$



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Kentucky KSA 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 Kentucky KSA practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.RP.3) Both A and B work, but A is more efficient. Using a proportion: $\frac{52}{100} = \frac{x}{650}$ gives $x = 338$ girls. Method A avoids extra steps.
- 2) **The correct answer is 7.** (7.G.1-7.G.5) Scale factor = $\frac{14}{10} = 1.4$. Height = $5 \times 1.4 = 7$ ft.
- 3) **Choice C is correct.** (7.EE.4a) Distribute left side: $2(x) + 2(-7) = 2x - 14$. This gives $2x - 14 = 2x - 14$, an identity. Since both sides are identical for every value of x , all real numbers are solutions. (This is a special case showing the importance of distributing correctly.)
- 4) **Choice D is correct.** (7.RP.1-7.RP.3) Ratio: $\frac{\text{flour}}{\text{sugar}} = \frac{2/3}{1/3} = \frac{2}{3} \times \frac{3}{1} = 2$.
- 5) **Choice C is correct.** (7.SP.5-7.SP.8) Outcomes with exactly two tails: TTH, THT, HTT. That is 3 out of 8 equally likely outcomes.
- 6) **Choice C is correct.** (7.SP.1-7.SP.4) The population is the entire group of items being studied (all 5000 items). The sample is the subset of 100 items selected for inspection.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) First spinner: 3 outcomes; second spinner: 2 outcomes. Total: $3 \times 2 = 6$ outcomes.
- 8) **Choice A is correct.** (7.SP.1-7.SP.4) MAD is the average of the absolute deviations from the mean, measuring typical spread around the center. It is not a measure of center (B, C) or range (D).
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) With 10 data points, the median is the average of the 5th and 6th values. Ordered: 1, 1, 1, 2, 2, 2, 3, 4, 5. The 5th and 6th values are both 2, so median = 2 hours.
- 10) **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.
- 11) **Choice A is correct.** (7.SP.5-7.SP.8) Numbers greater than 8: 10, 12, 14, 16 (4 out of 8). $P(> 8) = \frac{4}{8} = \frac{1}{2}$.
- 12) **Choice A is correct.** (7.SP.5-7.SP.8) Doubles: (1,1), (2,2), (3,3), (4,4), (5,5), (6,6) = 6 outcomes out of 36. Probability = $\frac{6}{36} = \frac{1}{6}$.
- 13) **Choice A is correct.** (7.SP.6) Experimental probability = $\frac{340}{500}$. This simplifies to $\frac{17}{25} = 0.68$. Option A gives the most direct form from the observed data.
- 14) **Choice B is correct.** (7.SP.1-7.SP.4) There are 14 values. Lower half: 43, 47, 52, 55, 58, 61, 64 (7 values). Median of lower half (Q1) is the 4th value: 55.
- 15) **Choice A is correct.** (7.SP.5-7.SP.8) Total marbles = $8 + 12 = 20$. Probability = $\frac{\text{red}}{\text{total}} = \frac{8}{20}$.
- 16) **Choice C is correct.** (7.RP.3) Percent error = $\frac{|66-72|}{72} \times 100\% = \frac{6}{72} \times 100\% = 8.3\%$.
- 17) **The correct answer is 153.86.** (7.G.4-7.G.6) $A = 3.14 \times 7^2 = 3.14 \times 49 = 153.86$ cm².
- 18) **The correct answer is A,D.** (7.G.1-7.G.5) (A) $(1, 0) \xrightarrow{90^\circ \text{CCW}} (0, 1) \xrightarrow{\text{reflect } x\text{-axis}} (0, -1)$. ✓ (B) $(2, 3) \xrightarrow{90^\circ \text{CCW}} (-3, 2) \xrightarrow{\text{reflect } x\text{-axis}} (-3, -2)$ —mathematically correct but not asked. (C) The composite is NOT equivalent to 90° clockwise (that would be $(y, -x)$, giving $(0, -1)$ for $(1, 0)$, which matches by coincidence, but try $(2, 3) \rightarrow (3, -2)$ for 90° CW). (D) Both operations preserve distance from origin.
- 19) **Choice C is correct.** (7.EE.1-7.EE.2) Distribute -7: $-7(3n) - 7(-2) = -21n + 14$. Negative times negative is positive.
- 20) **Choice D is correct.** (7.RP.3) Selling price = cost $\times 1.30$. So $84 = \text{cost} \times 1.30$, giving cost = $84 \div 1.30 \approx \$64.62$.
- 21) **Choice D is correct.** (7.RP.3) $I = Prt = 800 \times 0.05 \times 3 = \120 .
- 22) **Choice A is correct.** (7.NS.1-7.NS.3) $-8 - 3 = -8 + (-3) = -11$. Both values are negative, so the sum is more negative.
- 23) **Choice A is correct.** (7.EE.1) Simplify the left side: $(12 - 5 + 3)a = 10a$, which equals the right side. Both expressions are equivalent.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) Linear scale 1 : 6 means area scale is $1 : 6^2 = 1 : 36$. Actual area = $24 \times 36 = 864$ cm².
- 25) **Choice C is correct.** (7.RP.3) 85% of 40 is $0.85 \times 40 = 34$ questions.
- 26) **Choice D is correct.** (7.NS.1b) Add from left to right: $-4 + 6 = 2$, then $2 + (-2) = 0$. Alternatively, combine the negatives: $-4 + (-2) = -6$, then $-6 + 6 = 0$.



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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