

9 Kentucky

KSA

GRADE 7

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

Program



9 PRINTED TESTS



2 ONLINE TESTS



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



BUILT FOR ACAP
Standards-Aligned



**STRENGTHEN
SKILLS**



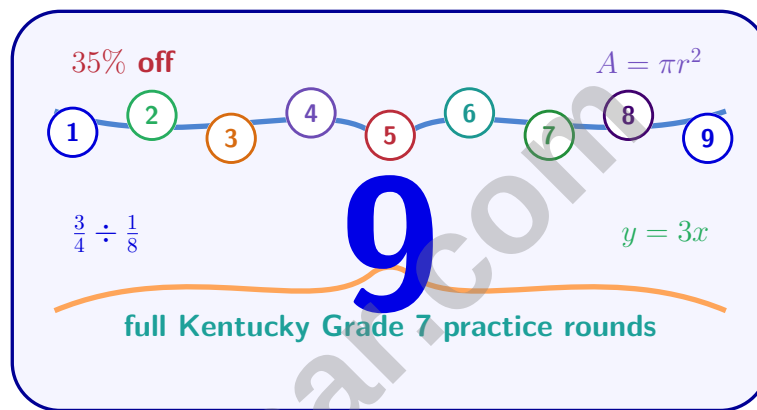
**SHARPEN
THINKING**



BE TEST-READY
Improve Performance

9 Kentucky KSA Grade 7 Math Practice Tests

Standards-Aligned Kentucky Practice for Proportional Reasoning, Expressions, Geometry, Statistics, and Probability



Nine 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!

Nine focused rounds for sharper KSA math thinking

This book gives you nine 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 nine-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?

Nine KSA tests, 360 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.
Tests 7–9	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
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) What is $\sqrt{225}$?

☐ A. 13

☐ C. 15

☐ B. 14

☐ D. 16

2) A game involves spinning a spinner. The results of 600 spins are shown:

Outcome	Green	Yellow	Purple
Times	240	200	160

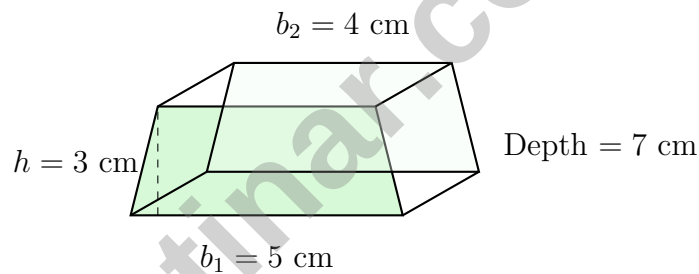
If the spinner is spun 1 more time, which outcome has the highest experimental probability of occurring?

☐ A. Green

☐ C. Purple

☐ B. Yellow

☐ D. All are equally likely



3)

A trapezoidal prism has a trapezoidal base with parallel sides 5 cm and 4 cm, height 3 cm, and prism depth 7 cm. What is the volume?

☐ A. 94.5 cm^3

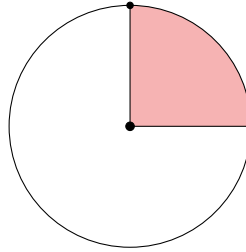
☐ C. 126 cm^3

☐ B. 115.5 cm^3

☐ D. 189 cm^3



4) In the diagram, approximately what fraction of the circle is shaded?



- ☐ A. $\frac{1}{2}$
☐ B. $\frac{1}{3}$

- ☐ C. $\frac{1}{4}$
☐ D. $\frac{1}{8}$

5) Which event has a probability closest to 0 but is NOT impossible?

- ☐ A. Rolling a 7 on a standard die
☐ B. Flipping a coin 10 times and getting all heads
☐ C. Drawing a red card from a shuffled deck containing 51 cards
☐ D. Spinning the number 5 on a spinner with only 1, 2, 3, 4

6) Two triangles have sides (3, 4, 5) and (3, 4, 5), respectively. Can we conclude they are congruent?

- ☐ A. No, they are only similar
☐ B. Yes, by SSS
☐ C. Yes, by SAS
☐ D. No, we need angle measures

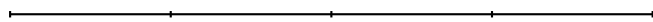
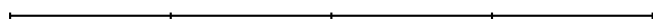
7) A blueprint has a scale of 1 inch : 8 feet. A room on the blueprint is 3 inches by 2.5 inches. What are the actual dimensions?

- ☐ A. 9 feet $\times$ 8 feet
☐ B. 3 feet $\times$ 2.5 feet
☐ C. 11 feet $\times$ 10.5 feet
☐ D. 24 feet $\times$ 20 feet



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0% 25% 50% 75% 100%



8)

On the double number line, what value corresponds to 25% if 100% equals 120?

☐ A. 15

☐ C. 25

☐ B. 20

☐ D. 30

9) Evaluate $\frac{2x-3}{5}$ when $x = 4$.

☐ A. $\frac{1}{5}$
☐ C. 1

☐ B. 2

☐ D. $\frac{11}{5}$

10) A runner covers $2\frac{1}{2}$ miles in $\frac{2}{5}$ hour. What is the runner's speed?

☐ A. 6.5 mph

☐ C. $\frac{5}{4}$ mph

☐ B. $\frac{5}{2}$ mph

☐ D. $\frac{25}{4}$ mph

11) The table shows a proportional relationship between hours worked and earnings.

Hours	Earnings (\$)
2	18
4	36
6	54

What is the constant of proportionality?

☐ A. $k = 36$
☐ C. $k = 2$
☐ B. $k = 18$
☐ D. $k = 9$


- 1) An online store deducts a 3% processing fee from seller payments. If a seller receives payment for items totaling \$1,000, how much is deducted as a fee?
- ☐ A. \$15 ☐ C. \$30
☐ B. \$25 ☐ D. \$100
- 2) A store sells $\frac{3}{5}$ pound of cheese for \$6. What is the unit price per pound?
- ☐ A. \$9 ☐ C. \$4
☐ B. \$3.60 ☐ D. \$10
- 3) If y is proportional to x and $y = 20$ when $x = 4$, what is the constant of proportionality?
- ☐ A. $k = 80$ ☐ C. $k = 20$
☐ B. $k = 4$ ☐ D. $k = 5$
- 4) A baker makes cookies in batches. Every batch requires $\frac{1}{4}$ cup of vanilla. If the baker makes b batches, which equation shows the total vanilla v (in cups) needed?
- ☐ A. $v = 4b$ ☐ C. $v = b + \frac{1}{4}$
☐ B. $b = \frac{1}{4}v$ ☐ D. $v = \frac{1}{4}b$
- 5) An error analysis: A student claims that in the equation $y = \frac{3}{2}x$, the constant of proportionality is $k = \frac{2}{3}$. What is wrong?
- ☐ A. Nothing is wrong; $k = \frac{2}{3}$ is correct. ☐ C. The equation is not proportional.
☐ B. The student forgot to include x . ☐ D. The student flipped the fraction.



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6) Evaluate $\frac{7}{8} \div \frac{7}{12}$.

7) A rectangular prism has length 16 in, width 8 in, and height 2 in. What is the surface area?

☐ A. 120 in^2

☐ C. 352 in^2

☐ B. 240 in^2

☐ D. 412 in^2

8) A simulation consists of rolling a die and flipping a coin, recording both results. This is the compound event. How many equally likely outcomes are in the sample space?

☐ A. 6

☐ C. 12

☐ B. 8

☐ D. 36

9) A school wants to know which sports are most popular among its students. Compare these two methods:

- *Method 1:* Ask the students in the first period gym class
- *Method 2:* Randomly select 30 students from a complete list of all students

Why is Method 2 more likely to produce an accurate estimate?

☐ A. Method 2 is faster to conduct

☐ C. Method 2 uses fewer students

☐ B. Method 2 includes students with different interests and backgrounds

☐ D. Method 2 requires no preparation



1) Which inequality represents “a number is more than twice itself minus 5”?

☐ A. $n > 2n - 5$

☐ C. $2n > n - 5$

☐ B. $n > 2n + 5$

☐ D. $n + 5 > 2n$

2) Solve: $4x + 3 = 15$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 6$

3) What is the solution to $\frac{3}{4}x = 12$? Use a reciprocal to solve and verify.

☐ A. $x = 9$

☐ C. $x = 16$

☐ B. $x = 12$

☐ D. $x = 36$

4) A student incorrectly found the scale factor as the reciprocal of the intended scale. If the correct scale is 3 : 1, what scale did the student use?

☐ A. 1 : 3

☐ C. 6 : 1

☐ B. 3 : 3

☐ D. 1 : 6

5) A scale drawing of a rectangular parking lot uses scale 1 cm : 3 m. The drawing shows a length of 5 cm. An error occurs and the scale is mistakenly read as 1 cm : 5 m. What incorrect length would someone calculate for the actual parking lot using the wrong scale?

☐ A. 15 m

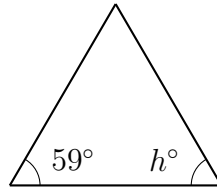
☐ C. 25 m

☐ B. 20 m

☐ D. 8 m



6)



A triangle is formed with one angle of 59° at the bottom left and another angle h at the bottom right. The top angle is 62° . What is h ?

☐ A. 28° ☐ C. 62° ☐ B. 59° ☐ D. 121°

7) If $\frac{a}{9} = \frac{8}{12}$, what is the value of a ?

☐ A. 5☐ C. 7☐ B. 6☐ D. 10

8)

 $r = 5 \text{ ft}$ 

Circle 1

 $r = 10 \text{ ft}$ 

Circle 2

Comparing these two circles, the area of Circle 2 is how many times the area of Circle 1? (Use $\pi \approx 3.14$.)

☐ A. 2 times☐ C. 4 times☐ B. 3 times☐ D. 5 times

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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 C is correct.** (7.NS.1-7.NS.3) $15 \times 15 = 225$, so $\sqrt{225} = 15$.
- 2) **Choice A is correct.** (7.SP.6) Green: $\frac{240}{600} = 0.40$; Yellow: $\frac{200}{600} \approx 0.33$; Purple: $\frac{160}{600} \approx 0.27$. Green has the highest probability.
- 3) **Choice A is correct.** (7.G.4-7.G.6) Base area = $\frac{1}{2}(5+4) \times 3 = \frac{1}{2} \times 9 \times 3 = 13.5 \text{ cm}^2$. Volume = $13.5 \times 7 = 94.5 \text{ cm}^3$.
- 4) **Choice C is correct.** (7.G.4-7.G.6) A 90° sector represents $\frac{90^\circ}{360^\circ} = \frac{1}{4}$ of the circle.
- 5) **Choice B is correct.** (7.SP.5-7.SP.8) Flipping 10 heads in a row has a very small probability ($\frac{1}{1024} \approx 0.001$) but is possible. Rolling a 7 on a standard die is impossible (probability = 0).
- 6) **Choice B is correct.** (7.G.1-7.G.5) Both triangles have identical side lengths: 3, 4, and 5. The SSS (Side-Side-Side) condition guarantees congruence.
- 7) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply each dimension by the scale factor: $3 \times 8 = 24$ feet and $2.5 \times 8 = 20$ feet.
- 8) **Choice D is correct.** (7.RP.3) 25% is $\frac{1}{4}$ of the total. $\frac{1}{4} \times 120 = 30$.
- 9) **Choice C is correct.** (7.EE.1-7.EE.2) Substitute: $\frac{2(4)-3}{5} = \frac{8-3}{5} = \frac{5}{5} = 1$.
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{2\frac{1}{2}}{2/5} = \frac{5/2}{2/5} = \frac{5}{2} \times \frac{5}{2} = \frac{25}{4} = 6.25$ mph.
- 11) **Choice D is correct.** (7.RP.1-7.RP.3) Divide earnings by hours: $\frac{18}{2} = 9$, $\frac{36}{4} = 9$, $\frac{54}{6} = 9$. The constant is $k = 9$ dollars per hour.
- 12) **Choice C is correct.** (7.RP.3) Set up $\frac{18}{100} = \frac{36}{x}$. Cross-multiply: $18x = 3600$, so $x = 200$.
- 13) **Choice A is correct.** (7.RP.3) Savings = 12% of \$1,200 = $0.12 \times 1200 = \$144$.
- 14) **Choice B is correct.** (7.NS.1-7.NS.3) Common denominator is 6: $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$.
- 15) **Choice A is correct.** (7.NS.1-7.NS.3) $4.06 \times 10^4 = 4.06 \times 10,000 = 40,600$. Move decimal 4 places right.
- 16) **Choice B is correct.** (7.EE.4a) Area: $3(x+2) = 30$. Divide by 3: $x+2 = 10$. (So length is 10 units; if needed, $x = 8$.)
- 17) **Choice C is correct.** (7.G.1-7.G.5) Multiply the original amount by the scale factor: $\frac{1}{2} \times 3 = \frac{3}{2} = 1\frac{1}{2}$ cups.
- 18) **The correct answer is A,C.** (7.G.4-7.G.6) Option A is correct (60 m^2). Option C is correct (18 m^2). The true total is $60 + 18 = 78 \text{ m}^2$, so D and
- 19) **Choice B is correct.** (7.NS.1-7.NS.3) Reading from graph: hour 1 is 16°C , hour 3 is 12°C . Change = $12 - 16 = -4^\circ\text{C}$.
- 20) **The correct answer is 30.** (7.SP.5-7.SP.8) Die outcomes: 6. Card outcomes: 5. Total: $6 \times 5 = 30$ outcomes.
- 21) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute the 2 and distribute the negative: $10x - 4 - (3x - 4) = 10x - 4 - 3x + 4$. Combine like terms: $(10x - 3x) + (-4 + 4) = 7x + 0 = 7x$. The simplified form shows that the constants cancel, leaving only $7x$.
- 22) **Choice A is correct.** (7.G.1-7.G.5) A plane parallel to the hexagonal bases of a prism produces a cross-section that is a regular hexagon congruent to the original bases, with the same side length and angles.
- 23) **The correct answer is 30.** (7.SP.5-7.SP.8) Each section has theoretical probability $\frac{1}{8}$. Expected frequency: $\frac{1}{8} \times 240 = 30$ times.
- 24) **Choice B is correct.** (7.G.1-7.G.5) If $G + (-5, 2) = (1, -4)$, then $G = (1, -4) - (-5, 2) = (1 - (-5), -4 - 2) = (1 + 5, -6) = (6, -6)$.
- 25) **Choice C is correct.** (7.G.4-7.G.6) $A = 3.14 \times 9^2 = 3.14 \times 81 = 254.34 \text{ m}^2$.
- 26) **Choice B is correct.** (7.SP.1-7.SP.4) Dataset 1 ranges 10–30 (range = 20). Dataset 2 ranges 15–25 (range = 10). Dataset 2 has lower variability and is more compact around the median.
- 27) **Choice A is correct.** (7.SP.1-7.SP.4) Central angle = $\frac{60\%}{100\%} \times 360^\circ = 0.60 \times 360^\circ = 216^\circ$.
- 28) **Choice A is correct.** (7.SP.5-7.SP.8) Total students: $15 + 10 = 25$. Girls: 10. $P(\text{girl}) = \frac{10}{25} = 0.4$.
- 29) **The correct answer is 20.** (7.RP.1-7.RP.3) Cross multiply: $7 \times 100 = 35 \times x$. So $700 = 35x$, giving $x = 20$.



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Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

Grade 7 test-day tip: When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

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

Jay Daie

Your Confidence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **9** 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:

9 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answer 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



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Deeper Understanding

Reinforce key concepts with clear explanations and meaningful practice.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

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- ✓ The Number System
- ✓ Expressions & Equations
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- ✓ 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!

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