

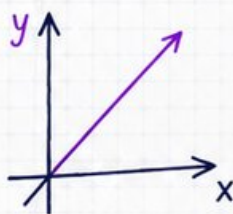
3

Kentucky KSA

GRADE
7
MATH

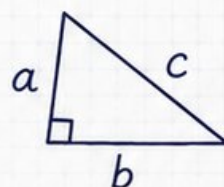
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



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



3 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



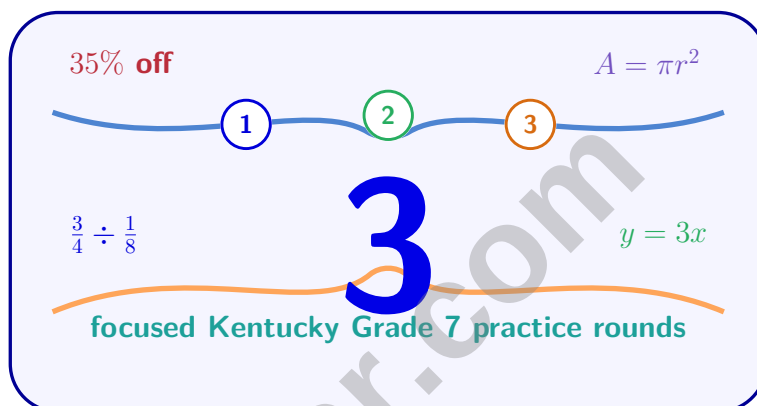
Detailed Answers
& Explanations



Improve Test
Performance

3 Kentucky KSA Grade 7 Math Practice Tests

Kentucky Grade 7 Math Prep with Three Focused Rounds



Three 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!

Three focused rounds for sharper KSA math thinking

This book gives you three 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 three-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?

Three KSA tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Test 3	Expressions, equations, inequalities, scale drawings, geometry, data, probability, 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

Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	27
★ Practice Test 3	_____	43
Practice Test Answer Keys	_____	56
Practice Test Answers and Explanations	_____	59

1) Convert $\frac{2}{3}$ to a decimal.

☐ A. $0.\overline{2}$

☐ C. 0.23

☐ B. $0.\overline{6}$

☐ D. 0.32

2) An estimate of 42 meters has a percent error of 16.7% compared to the actual distance. What was the actual distance?

☐ A. 35 meters

☐ C. 36 meters

☐ B. 48 meters

☐ D. 50 meters

3) A mountain climber is at 200 meters above sea level. She descends 350 meters. At what elevation is she now? Write your answer as an integer.

4) Expand: $5(3y - 2)$

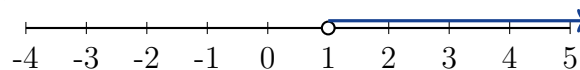
☐ A. $15y - 2$

☐ C. $15y - 10$

☐ B. $8y - 7$

☐ D. $3y - 10$

5) Which statement correctly describes what the open circle represents on a number line?



☐ A. The boundary value is included in the solution set

☐ C. The solution includes only positive numbers

☐ B. The boundary value is NOT included in the solution set

☐ D. The solution includes all real numbers



6) An item that originally costs \$200 is discounted by \$50. What is the percent discount?

- ☐ A. 20% ☐ C. 40%
☐ B. 33% ☐ D. 25%

7) Sarah has two options to save money. Option 1: \$1000 at 4% simple interest for 5 years. Option 2: \$1200 at 3% simple interest for 5 years. Which produces more total money?

- ☐ A. Option 1 ☐ C. Both are equal
☐ B. Cannot determine without more data ☐ D. Option 2

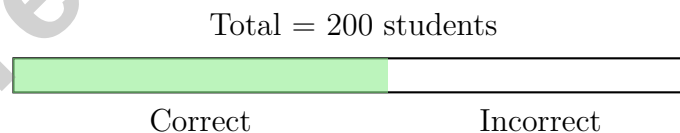
8) Which of the following is NOT a like term with $6xy$?

- ☐ A. $-4xy$ ☐ C. $2xy^2$
☐ B. $9yx$ ☐ D. $10xy$

9) A soccer field is 100 yards long. On a scale drawing where $\frac{1}{2}$ inch = 10 yards, how long is the field on the drawing?

- ☐ A. 2 inches ☐ C. 20 inches
☐ B. 10 inches ☐ D. 5 inches

10)



The bar shows 55% of 200 students answered correctly. How many students answered correctly?

- ☐ A. 90 ☐ C. 110
☐ B. 100 ☐ D. 120



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- 11) The temperature was -7°C in the morning. It rose by 15°C during the day. What was the temperature after the rise?

☐ A. -22°C ☐ C. 8°C ☐ B. -8°C ☐ D. 22°C

- 12) A plumber completes $\frac{1}{2}$ of a job in $\frac{2}{3}$ hour. At this rate, how many total hours does it take to complete the entire job?

- 13) A recipe calls for 2 cups of flour for every 1 cup of sugar. If the recipe uses s cups of sugar, which expression shows the amount of flour needed?

☐ A. $s + 2$ ☐ C. $\frac{s}{2}$ ☐ B. $2s$ ☐ D. $2 + s$

- 14) Which pair of expressions are equivalent?

☐ A. $2(x + 7)$ and $2x + 7$ ☐ C. $5(a + 2)$ and $5a + 2$ ☐ B. $3(2y - 4)$ and $6y - 12$ ☐ D. $4(3m - 1)$ and $12m - 1$

- 15) A triangular prism has a right triangular base with legs 6 m and 8 m (hypotenuse 10 m by Pythagorean theorem). The prism height is 9 m. What is the surface area?

☐ A. 48 m^2 ☐ C. 264 m^2 ☐ B. 144 m^2 ☐ D. 288 m^2 

- 1) A discount store marks all items at $\frac{3}{4}$ of the original price. If o is the original price and d is the discounted price, which equation is correct?

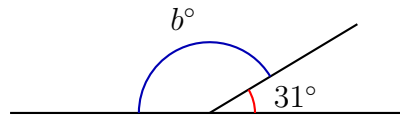
☐ A. $d = o + \frac{3}{4}$

☐ C. $o = \frac{3}{4}d$

☐ B. $d = o - \frac{3}{4}$

☐ D. $d = \frac{3}{4}o$

2)



A ray extends upward from a point on a horizontal line. The angle on the right is 31° . What is angle b on the left?

☐ A. 31°

☐ C. 90°

☐ B. 59°

☐ D. 149°

- 3) Point $P(4, -3)$ is reflected over the x -axis. What are the coordinates of the image P' ?

☐ A. $(-4, -3)$

☐ C. $(4, 3)$

☐ B. $(-4, 3)$

☐ D. $(4, -3)$

- 4) Two similar triangles have a scale factor of $1 : 3$. The smaller triangle has a side of 5 cm. What is the length of the corresponding side in the larger triangle?

☐ A. 5 cm

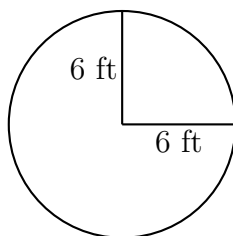
☐ C. 15 cm

☐ B. 10 cm

☐ D. 35 cm



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5)

The radius of this circle is 6 feet. What is its circumference? Use $\pi \approx \frac{22}{7}$.

☐ A. $\frac{132}{7}$ ft

☐ C. $\frac{66}{7}$ ft

☐ B. $\frac{264}{7}$ ft

☐ D. $\frac{792}{7}$ ft

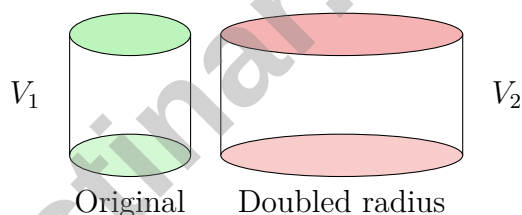
6) A circular garden has a diameter of 20 feet. About how many square feet is the garden? Use $\pi \approx 3.14$.

☐ A. 62.8 ft²

☐ C. 314 ft²

☐ B. 125.6 ft²

☐ D. 1256 ft²



7)

If a cylinder's radius is doubled while the height remains the same, the volume increases by a factor of:

☐ A. 2

☐ C. 8

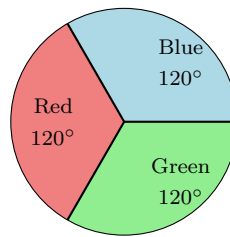
☐ B. 4

☐ D. 16



- 1) A scale model of a car is built with a scale of 1 : 24. If the model is 20 cm long, how long is the actual car?

- ☐ A. 2 m ☐ C. 5 m
☐ B. 4.8 m ☐ D. 480 m



2)

This spinner has three equal 120° sectors. What is $P(\text{Blue})$?

- ☐ A. $\frac{1}{3}$ ☐ C. $\frac{120}{180}$
☐ B. $\frac{1}{4}$ ☐ D. $\frac{2}{5}$

- 3) A sales associate earned \$150 in commission on \$2,500 worth of sales. What is the commission rate?

- ☐ A. 4% ☐ C. 6%
☐ B. 5% ☐ D. 8%

- 4) A loan calculator shows that borrowing \$8 000 at 6% interest for 3 years costs \$1 440 in total interest. Approximately how much is paid back in total?

- ☐ A. \$6 560 ☐ C. \$8 000
☐ B. \$7 440 ☐ D. \$9 440



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- 5) A baker makes 18 loaves of bread in 3 hours. At this constant rate, how many loaves are made per hour?

- 6) A \$1,300 investment at 6.5% annual compound interest grows to what balance after 2 years?

- ☐ A. \$1,369.03 ☐ C. \$1,474.53
☐ B. \$1,419.03 ☐ D. \$1,572.62

- 7) A video game costs \$60. Due to high demand, the price increases to \$72. Later, the store runs a 10% off sale on the new price. What is the final price?

- ☐ A. \$60 ☐ C. \$64.80
☐ B. \$62.40 ☐ D. \$70

- 8) A bond pays \$360 in simple interest on a principal of \$2000 over 3 years. What is the annual interest rate?

- ☐ A. 4% ☐ C. 6%
☐ B. 5% ☐ D. 7.2%

- 9) Which group shows ALL the like terms in the expression $5a + 3b + 7a + 2c + 8b$?

- ☐ A. $3b$ and $8b$ ☐ C. $5a$ and $7a$
☐ B. $2c$ and $5a$ ☐ D. $5a$, $7a$, $3b$, and $8b$



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 B is correct.** (7.NS.2d) Divide $2 \div 3 = 0.666\ldots = 0.\bar{6}$. The denominator 3 produces a repeating decimal.
- 2) **Choice D is correct.** (7.RP.3) If percent error is 16.7%, then $\frac{|42 - \text{actual}|}{|\text{actual}|} \times 100\% = 16.7\%$. Testing 50: $\frac{|42 - 50|}{50} \times 100\% = 16\% \approx 16.7\%$.
- 3) **The correct answer is -150.** (7.NS.1-7.NS.3) The elevation change is $200 - 350 = -150$. She is now 150 meters below sea level.
- 4) **Choice C is correct.** (7.EE.1-7.EE.2) Distribute 5: $5(3y) - 5(2) = 15y - 10$.
- 5) **Choice B is correct.** (7.EE.4b) An open circle indicates a strict inequality ($<$ or $>$), meaning the boundary value itself is not part of the solution.
- 6) **Choice D is correct.** (7.RP.3) Percent discount = $\frac{50}{200} \times 100 = 25\%$.
- 7) **Choice D is correct.** (7.RP.3) Option 1: $A = 1000 + 1000(0.04)(5) = 1000 + 200 = \1200 . Option 2: $A = 1200 + 1200(0.03)(5) = 1200 + 180 = \1380 . Option 2 is higher.
- 8) **Choice C is correct.** (7.EE.1) Like terms must have the same variables with the same exponents. $2xy^2$ has x^1y^2 , while $6xy$ has x^1y^1 . The exponents on y differ, so they are not like terms. Options A and D are clearly like $6xy$. Option B, $9yx$, equals $9xy$ by commutativity, so it is also a like term with $6xy$.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) If $\frac{1}{2}$ inch = 10 yards, then 1 inch = 20 yards. So $100 \div 20 = 5$ inches.
- 10) **Choice C is correct.** (7.RP.3) 55% of 200 is $0.55 \times 200 = 110$ students.
- 11) **Choice C is correct.** (7.NS.1b) The temperature change is modeled by $-7 + 15 = 8$. A rise of 15° means we add 15 to the initial temperature of -7° .
- 12) **The correct answer is $\frac{4}{3}$.** (7.RP.1-7.RP.3) If $\frac{1}{2}$ job takes $\frac{2}{3}$ hour, then 1 full job takes $\frac{2}{3} \times 2 = \frac{4}{3}$ hours.
- 13) **Choice B is correct.** (7.EE.1-7.EE.2) The ratio is 2 cups flour per 1 cup sugar, so $f = 2s$.
- 14) **Choice B is correct.** (7.EE.1-7.EE.2) Check: $3(2y - 4) = 6y - 12$. This is the only pair that are equivalent.
- 15) **Choice C is correct.** (7.G.4-7.G.6) Two triangular bases: $2 \times \frac{1}{2}(6)(8) = 48 \text{ m}^2$. Three rectangular sides: $6 \times 9 = 54$, $8 \times 9 = 72$, $10 \times 9 = 90 \text{ m}^2$. Total: $48 + 54 + 72 + 90 = 264 \text{ m}^2$.
- 16) **Choice B is correct.** (7.SP.5-7.SP.8) By the Law of Large Numbers, as the number of trials increases, the relative frequency (experimental probability) converges to the theoretical probability. With 10000 spins, the relative frequency of 0.32 is a strong estimate of the true theoretical probability.
- 17) **Choice B is correct.** (7.NS.1-7.NS.3) Change: $-30 - 0 = -30^\circ\text{C}$. Rate: $(-30) \div 10 = -3^\circ\text{C}/\text{hour}$.
- 18) **The correct answer is A,C.** (7.SP.1-7.SP.4) City A dark roast (42%) $>$ City B dark roast (38%), so A is correct. City B light roast (40%) $>$ City A light roast (35%), so C is correct. B is wrong (survey size not given). D is wrong (A: 23%, B: 22%).
- 19) **Choice C is correct.** (7.NS.1-7.NS.3) Paper weight: $4.2 \times \frac{3}{7} = \frac{12.6}{7} = 1.8 \text{ kg}$.
- 20) **Choice A is correct.** (7.NS.1-7.NS.3) 6.3×10^{-8} means move the decimal 8 places left: $6.3 \rightarrow 0.000000063$.
- 21) **Choice A is correct.** (7.EE.1-7.EE.2) Product rule in numerator: $e^{11} \cdot e^4 = e^{15}$. Then quotient rule: $\frac{e^{15}}{e^9} = e^{15-9} = e^6$.
- 22) **Choice A is correct.** (7.EE.4a) Distribute: $-6x + 18 = 12$. Subtract 18: $-6x = -6$. Divide by -6 : $x = 1$.
- 23) **Choice C is correct.** (7.EE.3-7.EE.4) If $\frac{m}{2} = 9$, then $m = 9 \times 2 = 18$.
- 24) **Choice A is correct.** (7.EE.4b) Subtract 2: $0.5x < 5$. Divide by 0.5: $x < 10$.
- 25) **Choice C is correct.** (7.SP.1-7.SP.4) A sample of 100 students balances accuracy with practicality. Samples of 10 and 25 are too small to reliably represent the whole school; 1000 would give similar accuracy but be costly and time-consuming to conduct.
- 26) **Choice A is correct.** (7.SP.5-7.SP.8) Die outcomes: 6; fruit outcomes: 3. By the counting principle: $6 \times 3 = 18$ outcomes. The student is correct.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) Check the ratios: $\frac{5}{2} = 2.5$, $\frac{10}{4} = 2.5$, $\frac{17.5}{7} = 2.5$. Because the ratio $\frac{\text{temperature change}}{\text{time}}$ is constant, the relationship is proportional and would pass through the origin. The constant is $k = 2.5$ degrees per minute.



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Hi, Momentum Builder!

◇ Finishing a Grade 7 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 3 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 7 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** 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.



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 Detailed Answers & Explanations



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Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Detailed Answers & Explanations

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Apply your knowledge and achieve your best score!

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



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