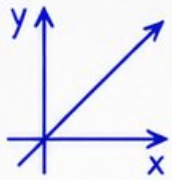
# 5 Arkansas ATLAS

GRADE 7 MATH

# PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs




$y = mx + b$

$\frac{2}{3} + \frac{1}{6} = \frac{5}{6}$

$V = \pi r^2 h$



**5 PRINTED TESTS**

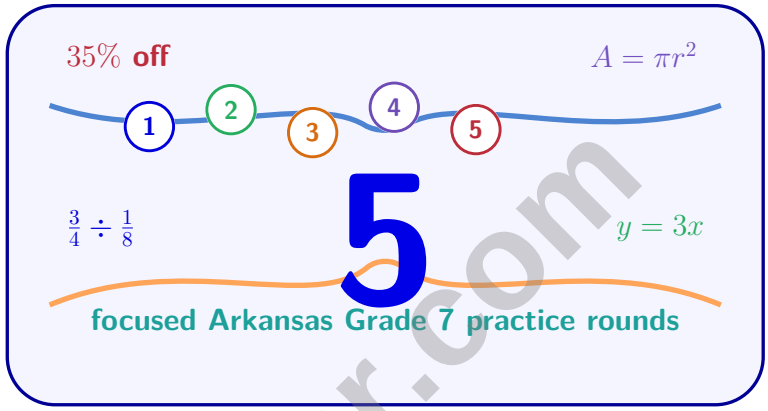
**2 ONLINE TESTS**

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

# 5 Arkansas ATLAS Grade 7 Math Practice Tests

*Grade 7 Math Practice with Review, Keys, and Step-by-Step Support*




**Five complete 40-question Grade 7 ATLAS 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, Arkansas Grade 7 Problem Solver!

Five focused rounds for sharper ATLAS math thinking

This book gives you five full Grade 7 ATLAS 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 Arkansas 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.

# How to Use This Book

A five-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.

**Arkansas 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?

Five ATLAS tests, 200 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. |
| Tests 3–5 | 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.

# Table of Contents


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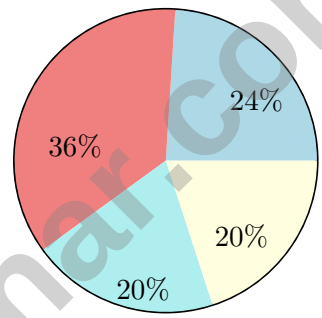
1) A class splits into two study groups. Group X: median = 82, IQR = 8. Group Y: median = 82, IQR = 14. Which group has more consistent performance?

☐ A. Group X (smaller IQR)
☐ B. Group Y (larger IQR means more diversity)
☐ C. Both are equally consistent
☐ D. Cannot determine without range

2) Evaluate the expression: $-15 - 6 + (-4)$. (Remember: subtraction and addition are performed left to right.)

☐ A. $-25$
☐ B. $-13$
☐ C. $-5$
☐ D. 5

3)




The circle graph shows a store's sales by department. Light blue is clothing (24%), light coral is electronics (36%), pale turquoise is home goods (20%), and light yellow is toys (20%). If the store made $\$50,000$ in total sales, how much came from electronics?

☐ A. $\$12,000$
☐ B. $\$18,000$
☐ C. $\$24,000$
☐ D. $\$36,000$

4) Maria scored 85% on a test with 40 questions. How many questions did she answer correctly?

☐ A. 24
☐ B. 30
☐ C. 34
☐ D. 36

5) A sports equipment store mistakenly labels a pair of shoes at $72 after applying what they thought was a 20% discount to a $90 cost. What discount rate was actually applied to reach $72?

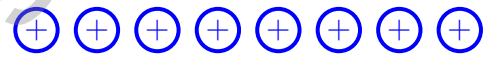
☐ A. 15%
☐ B. 18%
☐ C. 20%
☐ D. 25%

6) Which chip model represents $3 + (-5)$?

**A** 

**B** 

3 pairs canceled

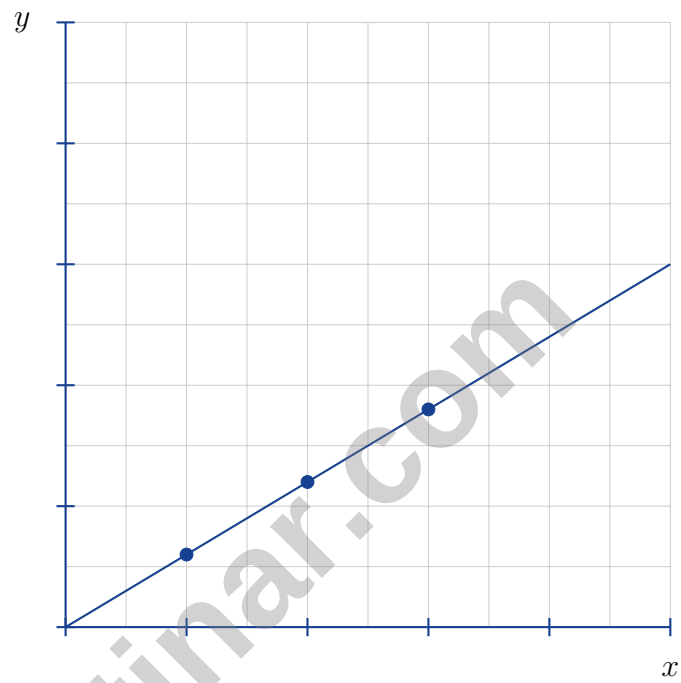
**C** 

**D** 

7) Simplify: $9c + 2d - c + 5d - 4c$

☐ A. $4c + 7d$
☐ B. $18cd$
☐ C. $-4c + 7d$
☐ D. $14c + 7d$

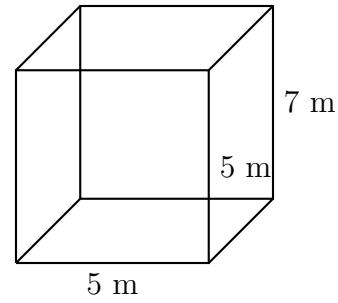
8)




Three collinear points are marked on a proportional graph. Which statement is true?

☐ A. The line does not pass through the origin.
☐ B. All three points satisfy $y = x$.
☐ C. The slope is undefined.
☐ D. The unit rate is 0.6.

1)




The net shown represents a rectangular prism. What is the surface area of the prism?

☐ A. 70 $m^2$
☐ B. 140 $m^2$
☐ C. 190 $m^2$
☐ D. 350 $m^2$

2)

| Sample | Agree | Disagree | Total |
|---|---|---|---|
| Morning | 45 | 15 | 60 |
| Afternoon | 54 | 18 | 72 |

In a survey about a proposal, which sample shows a higher proportion of agreement?

☐ A. Morning
☐ B. Afternoon
☐ C. Both are equal
☐ D. Cannot be determined

3) A river is 50 meters wide. On a map with scale 1 cm : 10 m, how wide does the river appear?

☐ A. 0.5 cm
☐ B. 500 cm
☐ C. 50 cm
☐ D. 5 cm

4) A photo costs \$0.50 each. If you buy $n$ photos for a total cost of $T$ dollars, which equation is correct?

☐ A. $n = 0.50T$
☐ B. $T = n + 0.50$
☐ C. $T = \frac{0.50}{n}$
☐ D. $T = 0.50n$

5) A compound event is defined as follows: "Flip a coin twice and record the results." If "success" is getting exactly one heads, how many successful outcomes are there in the sample space?

☐ A. 1
☐ B. 2
☐ C. 3
☐ D. 4

6) A museum posts a survey on its website for visitors to complete. What is the PRIMARY limitation of this method?

☐ A. The survey is too long
☐ B. It excludes non-internet users and creates voluntary response bias
☐ C. It requires payment from visitors
☐ D. It uses systematic random sampling

7) What is the greatest common numerical factor of $14ab$ and $21a$?

8) Which solution strategy is correct for $4x + 6 = 30$?

☐ A. Subtract 6, then divide by 4
☐ B. Divide by 4, then subtract 6
☐ C. Multiply by 4, then add 6
☐ D. Add 6, then divide by 4

1) If two similar rectangles have areas of 12 square cm and 48 square cm, what is the scale factor from the smaller to the larger rectangle?

☐ A. 2
☐ B. 4
☐ C. 2.45
☐ D. $\sqrt{12}$

2) Solve and identify the key step: $-5x \geq 20$

Original: $-5x \geq 20$

Divide both sides by $-5$.

**FLIP the inequality: $\geq$ becomes $\leq$**

Result: $x \leq -4$

☐ A. $x \leq -4$
☐ B. $x \geq -4$
☐ C. $x < 4$
☐ D. $x = -4$

3) Subtract: $\frac{5}{8} - \frac{7}{8}$

☐ A. $-\frac{1}{4}$
☐ B. $\frac{1}{4}$
☐ C. $-\frac{2}{8}$
☐ D. $\frac{3}{4}$

4) If $a \div (-3) = 4$, what is $a$?

☐ A. 12
☐ B. $-12$
☐ C. $1\frac{1}{3}$
☐ D. $-1\frac{1}{3}$

5) A bakery charges \$3 per cookie plus a \$4 delivery fee. If your total bill is \$19, how many cookies did you order?

6) Convert $\frac{21}{40}$ to a decimal.

☐ A. 0.21
☐ B. 0.4
☐ C. 0.525
☐ D. 0.84

7) A recipe calls for $\frac{3}{4}$ cup of sugar. If you are making $\frac{1}{2}$ of the recipe, how much sugar do you need?

☐ A. $\frac{3}{8}$ cup
☐ B. $\frac{1}{2}$ cup
☐ C. $\frac{5}{4}$ cups
☐ D. $1\frac{1}{2}$ cups

8) The mass of an electron is approximately $9.1 \times 10^{-31}$ kg. Which best describes this value?

☐ A. A very large mass
☐ B. A very small mass
☐ C. About 9 kg
☐ D. About 91 grams

9) Simplify: $(9r + 4) - (6r + 1)$

☐ A. $3r + 3$
☐ B. $3r + 5$
☐ C. $15r + 3$
☐ D. $3r - 3$

10) Simplify $14s^7 \div 7s^3$:

☐ A. $2s^4$
☐ B. $2s^{10}$
☐ C. $2s^{21}$
☐ D. $7s^4$

11) A concert ticket costs \$35 and a service fee is \$6.50 per ticket. If someone buys 3 tickets, what is the total cost?

☐ A. $3(35 + 6.50) = \$124.50$
☐ B. $3(35) + 3(6.50) = \$124.50$
☐ C. $35 + 3 + 6.50 = \$44.50$
☐ D. $35(3) + 6.50 = \$111.50$

# Arkansas ATLAS 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 Arkansas ATLAS practice test.**

# Practice Test Answers and Explanations

## Practice Test 1 Answers and Explanations

1) **Choice A is correct.** 7.SP.1-7.SP.4 Same median (82) but Group X has IQR = 8 (middle 50% spans 8 units) while Group Y has IQR = 14 (wider middle spread). Group X is more consistent.
2) **Choice A is correct.** 7.NS.1-7.NS.3 Working left to right: $-15-6=-21$, then $-21+(-4)=-25$.
3) **Choice B is correct.** 7.SP.1-7.SP.4 36% of $\$50,000 = 0.36 \times 50,000 = \$18,000$.
4) **Choice C is correct.** 7.RP.3 85% of 40 is $0.85 \times 40 = 34$ questions.
5) **Choice C is correct.** 7.RP.3 If original is \$90 and sale price is \$72, then discount $= (90-72)/90 = 18/90 = 0.20 = 20\%$.
6) **Choice D is correct.** 7.NS.1b We have 3 positive and 5 negative chips. The 3 positive chips pair with 3 of the negative chips and cancel. This leaves $5-3=2$ negative chips (representing $-2$). Thus $3+(-5)=-2$.
7) **Choice A is correct.** 7.EE.1 $c$ terms: $(9-1-4)c = 4c$. $d$ terms: $(2+5)d = 7d$. Result: $4c+7d$.
8) **Choice D is correct.** 7.RP.1-7.RP.3 From $(2, 1.2)$, $k = 1.2 \div 2 = 0.6$. Verify: $(4, 2.4)$ gives $2.4 \div 4 = 0.6$; $(6, 3.6)$ gives $3.6 \div 6 = 0.6$. Unit rate is 0.6.
9) **Choice C is correct.** 7.EE.1-7.EE.2 Sum of $x$ and $y$ is $(x+y)$. Quotient by 3 is $\frac{x+y}{3}$.
10) **Choice D is correct.** 7.RP.1-7.RP.3 $\frac{\frac{4}{5}}{\frac{2}{3}} = \frac{4}{5} \times \frac{3}{2} = \frac{12}{10} = \frac{6}{5}$.
11) **Choice D is correct.** 7.RP.1-7.RP.3 The constant ratio $y/x = 25$ means 25 gallons per minute (the unit rate).
12) **The correct answer is $\frac{2}{5}$ .** 7.RP.1-7.RP.3 The ratio flour to milk is 2 : 5, so the constant is $\frac{2}{5}$.
13) **Choice D is correct.** 7.RP.3 Set part over whole equal to percent over 100: $\frac{32}{80} = \frac{p}{100}$. Cross-multiply: $p = 40\%$.
14) **Choice A is correct.** 7.RP.3 Increase $= (\$2{,}500 - \$2{,}400) \div \$2{,}400 = \$100 \div \$2{,}400 \approx 0.0417 = 4.17\% \approx 4.2\%$.
15) **Choice C is correct.** 7.NS.1-7.NS.3 Starting at $-2.5$ and moving right 4.7 units: $-2.5+4.7=2.2$.
16) **The correct answer is 20 .** 7.RP.1-7.RP.3 If 2.5 cm = 50 km, then 1 cm $= 50 \div 2.5 = 20$ km.
17) **Choice B is correct.** 7.NS.1-7.NS.3 Sign rule: negative divided by positive always gives negative.
18) **Choice A is correct.** 7.NS.2d Divide $3 \div 8 = 0.375$, so $\frac{3}{8}$ equals 0.375.
19) **Choice B is correct.** 7.NS.1-7.NS.3 Net change: $150-210=-60$ feet.
20) **The correct answer is A,C.** 7.SP.1-7.SP.4 Sample 1: $\frac{36}{120} = 0.30$; Sample 2: $\frac{27}{90} = 0.30$. Both show 30%, so A is true. Equal proportions allow reliable population estimates (C is true). B and D is false (Sample 1 is larger at 120 vs 90).
21) **Choice C is correct.** 7.NS.1-7.NS.3 $1.5 \times 10^6 = 1.5 \times 1{,}000{,}000 = 1{,}500{,}000$.
22) **Choice C is correct.** 7.NS.1-7.NS.3 $\sqrt{144} = 12$ inches since $12 \times 12 = 144$.
23) **The correct answer is 0.03 .** 7.RP.3 $240 = 2000 \times r \times 4 \Rightarrow 240 = 8000r \Rightarrow r = 0.03$.
24) **Choice B is correct.** 7.EE.1-7.EE.2 A markup of 20% means adding 20% to the cost: $w + 0.2w = 1.2w$. This matches a surcharge or fee being added.
25) **Choice C is correct.** 7.SP.5-7.SP.8 There are 4 red sections out of 8 total, so $P(\text{red}) = \frac{4}{8} = \frac{1}{2}$.
26) **The correct answer is 13% .** 7.RP.3 Percent error $= \frac{|2.8-3.2|}{3.2} \times 100\% = \frac{0.4}{3.2} \times 100\% = 12.5\%$, rounds to 13%.
27) **Choice C is correct.** 7.RP.3 Commission rate $= \frac{150}{2500} = 0.06 = 6\%$.
28) **Choice A is correct.** 7.NS.2 $0.7 \times (-10) = -7$. Positive times negative is negative.
29) **Choice A is correct.** 7.SP.3 Student M's errors concentrate at 2–4 with peak at 3 and range 3 (2–5). Student N's errors vary widely from 1–7 (range 6), showing inconsistent performance.
30) **Choice C is correct.** 7.G.4-7.G.6 Decompose into two shapes: Rectangle area $= 8 \times 5 = 40$ ft$^2$; square area $= 3 \times 3 = 9$ ft$^2$. Add the areas: $40 + 9 = 49$ ft$^2$.
31) **Choice C is correct.** 7.RP.3 Interest: $0.18 \times 500 = \$90$ per year.
32) **Choice C is correct.** 7.RP.3 Year 1: $750(1.09) = 817.50$. Year 2: $817.50(1.09) = 891.08$. Year 3: $891.08(1.09) = 971.27$. Year 4: $971.27(1.09) = 1058.68 > 1000$.

## Author's Note

**A Page for Persistence**

## 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 5 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 **5** 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:

- **5** 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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