

# 10 Utah RISE

GRADE  
**7**  
MATH

## PRACTICE TESTS

Standards Aligned Problem  
Solving For Comprehensive  
Assessment Programs



### 10 PRINTED TESTS

Realistic practice to build  
confidence and mastery



### 2 ONLINE TESTS

Extra practice for  
continued success



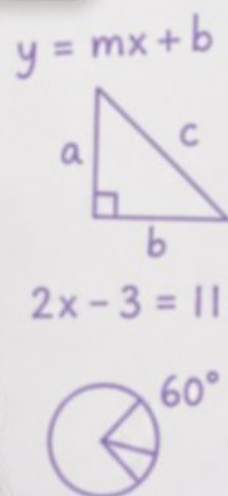
### DETAILED ANSWER EXPLANATIONS

Learn with step-by-step  
solutions



### FOCUSED & EFFECTIVE

Target key math skills  
with purposeful practice



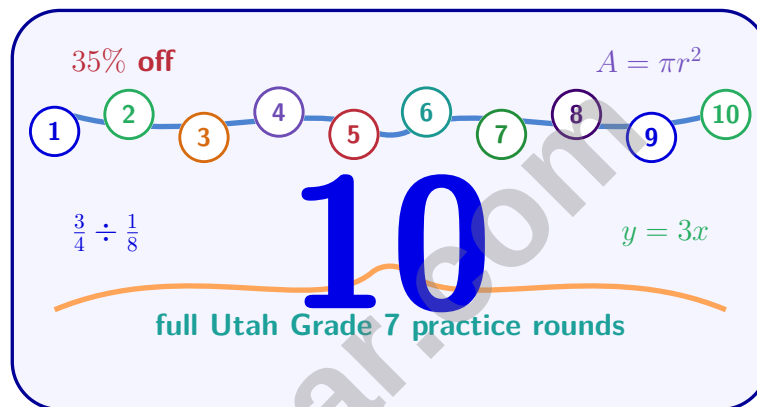
**10** PRINTED TESTS  
**+2** ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

# 10 Utah RISE Grade 7 Math Practice Tests

*Utah Grade 7 RISE Practice for canyon-clear readiness across proportional reasoning, expressions, scale, geometry, statistics, and chance*



Ten complete 40-question Grade 7 RISE 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, Utah Grade 7 Problem Solver!

Ten focused rounds for sharper Utah RISE math thinking

This book gives you ten full Grade 7 RISE 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 Utah 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 ten-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.

**Utah 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?

Ten Utah RISE tests, 400 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.                 |
| Test 10      | A final Utah round to show growth across the whole book.                                           |
| Answer Pages | Compact keys and explanations that show why each answer works.                                     |

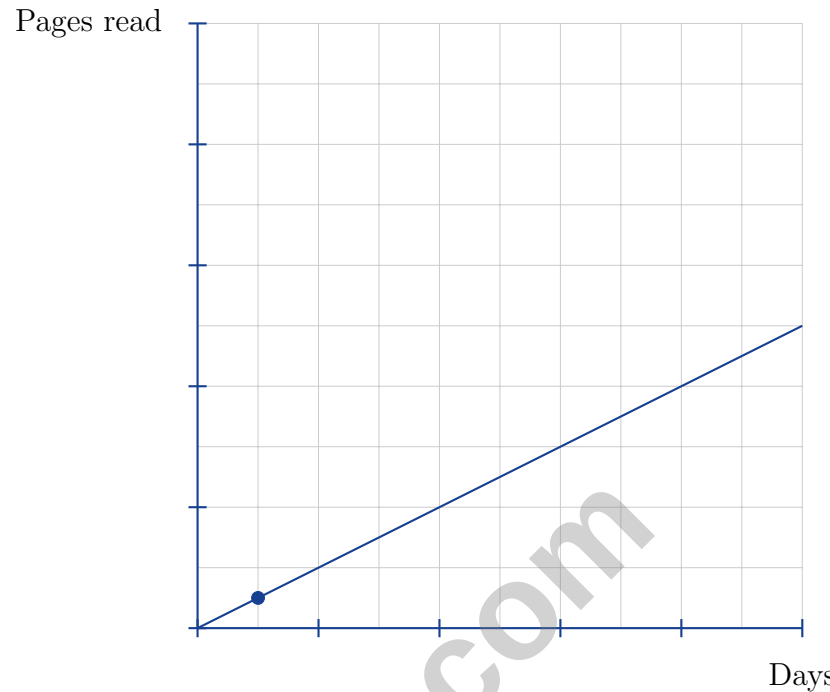
The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1)

A book club reads at a constant rate shown in the graph. How many pages are read in 6 days?

☐ A. 0.5 pages☐ C. 5 pages☐ B. 10 pages☐ D. 3 pages2) Solve for  $x$ :  $10(x - 2) = 50$ ☐ A.  $x = 5$ ☐ C.  $x = 8$ ☐ B.  $x = 7$ ☐ D.  $x = 10$ 

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3) An investor's portfolio gains \$125 on Monday, loses \$75 on Tuesday, and gains \$200 on Wednesday. What is the total change?

☐ A. \$250

☐ C. \$175

☐ B. \$200

☐ D. \$300

4) A student factored  $14a + 21b$  as  $7(2a + 3b)$ . Another factored it as  $7(2a) + 7(3b)$ . Are these equivalent?

☐ A. Yes, and both are fully factored

☐ C. No; you cannot distribute a 7 twice

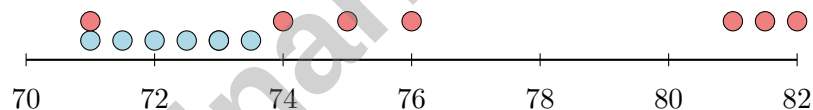
☐ B. No; the second form is not fully factored

☐ D. Yes, but only the first is fully factored

5) The dot plots below show the daily temperatures (in °F) for two months:

Month 2:

Month 1:



Which month is more consistent in temperature?

☐ A. Month 1 (tighter cluster)

☐ C. Both have equal consistency

☐ B. Month 2 (wider spread)

☐ D. Cannot tell from dot plots

6) 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?

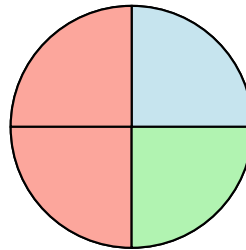
☐ A. Expensive bikes never sell

☐ C. Price and sales are unrelated

☐ B. Lower-priced bikes tend to sell more

☐ D. The store should lower all prices


- 7) A sandwich shop offers a choice of 2 breads, 3 proteins, and 4 vegetables. If you choose one of each, how many different sandwiches are possible?

☐ A. 9☐ C. 24☐ B. 18☐ D. 36

8)

A spinner has four equal sections: one blue, two red, and one green. What is the probability of spinning red?

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

- 9) Two spinners are spun. Spinner A has 5 equal sections, and Spinner B has 3 equal sections. If each outcome on Spinner A has probability  $\frac{1}{5}$  and each outcome on Spinner B has probability  $\frac{1}{3}$ , what is  $P(\text{specific outcome on A AND specific outcome on B})$ ?

☐ A.  $\frac{2}{8}$ ☐ C.  $\frac{1}{8}$ ☐ B.  $\frac{1}{15}$ ☐ D.  $\frac{1}{5} + \frac{1}{3} = \frac{8}{15}$ 

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1) A cylindrical pipe has a height of 12 inches. If the volume is  $301.44 \text{ in}^3$ , what is the radius? Use  $\pi \approx 3.14$ .

☐ A. 2 inches

☐ C. 4 inches

☐ B. 3 inches

☐ D. 5 inches

2) 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

☐ B. Region Q (larger range and spread) patterns

☐ D. Region P is more variable

3) In a stem-and-leaf plot, the stem represents the tens digit and leaves represent the ones digit. If a value is 67, what stem and leaf should be written?

☐ A. Stem 6, Leaf 7

☐ C. Stem 60, Leaf 7

☐ B. Stem 7, Leaf 6

☐ D. Stem 67, Leaf 1

4) Convert 2 cubic meters to cubic centimeters. (Hint:  $1 \text{ m} = 100 \text{ cm}$ )

☐ A.  $2 \times 10^6 \text{ cm}^3$

☐ C.  $2 \times 10^{12} \text{ cm}^3$

☐ B.  $2 \times 10^8 \text{ cm}^3$

☐ D.  $2 \times 10^9 \text{ cm}^3$

5) Identify the unlike terms in this expression:  $4a + 3b + 2a + 5c$

☐ A.  $4a$  and  $2a$

☐ C.  $4a$  and  $3b$

☐ B.  $3b$  and  $5c$

☐ D.  $2a$  and  $5c$



6) A cube has edge length 3 cm. What is its surface area?

☐ A.  $9 \text{ cm}^2$

☐ C.  $27 \text{ cm}^2$

☐ B.  $18 \text{ cm}^2$

☐ D.  $54 \text{ cm}^2$

7)

| Spin Result | Heads | Tails | Total |
|-------------|-------|-------|-------|
| Frequency   | 156   | 144   | 300   |

A coin is flipped 300 times. Based on the simulation, what is the estimated probability of getting tails?

☐ A. 0.44

☐ C. 0.50

☐ B. 0.48

☐ D. 0.52

8) A student evaluates  $5 - 3x$  when  $x = 2$  and writes: " $5 - 3(2) = 5 - 6 = -1$ ." Is this correct?

☐ A. No, the error is in the multiplication step

☐ C. No, the variable should not be substituted

☐ B. No, the error is in the subtraction step

☐ D. Yes, the answer is  $-1$ 

9) What is the GCF of  $6xy$  and  $9y$ ?

☐ A.  $3y$

☐ C.  $9y$

☐ B.  $6y$

☐ D.  $3xy$

10) Which inequality represents "the sum of a number and 2 is not equal to 7"?

☐ A.  $n + 2 \neq 7$

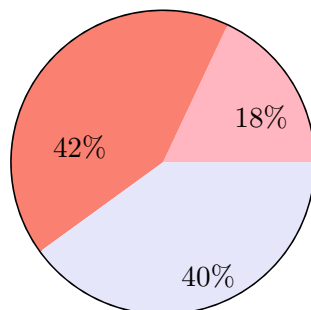
☐ C.  $n \neq 5$

☐ B.  $n + 2 = 7$

☐ D.  $n + 7 \neq 2$



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1)

The circle graph displays student participation in after-school activities. Light pink is sports (18%), salmon is clubs (42%), and lavender is arts (40%). If 600 students attend the school, how many participate in clubs?

☐ A. 108☐ C. 240☐ B. 180☐ D. 252

2) The thickness of a human hair is approximately 0.00008 meters. What is this in scientific notation?

☐ A.  $8 \times 10^{-4}$ ☐ C.  $0.8 \times 10^{-4}$ ☐ B.  $8 \times 10^{-5}$ ☐ D.  $80 \times 10^{-6}$ 

3) Simplify:  $(-6j + 12) + (4j - 8)$

☐ A.  $-2j + 4$ ☐ C.  $2j + 4$ ☐ B.  $-2j - 4$ ☐ D.  $10j + 4$ 

4) Which expression is NOT equal to  $y^6$ ?

☐ A.  $y^3 \cdot y^3$ ☐ C.  $\frac{y^{10}}{y^4}$ ☐ B.  $(y^2)^3$ ☐ D.  $y^2 \cdot y^3$ 

- 5) A librarian is setting up a reading challenge. Students earn 5 points for each book read and receive a 10-point bonus just for participating. If a student earned 75 points total, which equation represents  $b$ , the number of books read?

☐ A.  $10 + 5b = 75$

☐ C.  $10b + 5 = 75$

☐ B.  $5b + 10 = 75$

☐ D.  $5(b + 10) = 75$

- 6) Solve:  $\frac{x}{4} + 5 = 9$

☐ A.  $x = 8$

☐ C.  $x = 16$

☐ B.  $x = 12$

☐ D.  $x = 20$

- 7) Solve for  $x$ :  $-3(x + 4) = 24$

☐ A.  $x = -12$

☐ C.  $x = 4$

☐ B.  $x = -8$

☐ D.  $x = 8$

- 8) A bag contains red and blue marbles. A simulation draws a marble, records the color (red), and replaces it. This is repeated 400 times, and red is drawn 284 times. Based on this simulation, what is the estimated probability of drawing a red marble? (Express as a decimal.)

- 9) A car travels 240 miles in 4 hours. What is the car's average speed? Estimate to check reasonableness.

☐ A. 50 mph

☐ C. 80 mph

☐ B. 60 mph

☐ D. 120 mph



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**Utah RISE 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 Utah RISE practice test.**



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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.RP.1-7.RP.3) From the unit-rate point (1, 0.5), at  $x = 6$ ,  $y = 6 \times 0.5 = 3$  pages.
- 2) **Choice B is correct.** (7.EE.4a) Distribute:  $10x - 20 = 50$ . Add 20:  $10x = 70$ . Divide by 10:  $x = 7$ .
- 3) **Choice A is correct.** (7.NS.1-7.NS.3) Total change =  $\$125 - \$75 + \$200 = \$250$ .
- 4) **Choice D is correct.** (7.EE.1-7.EE.2) Both are equivalent:  $7(2a + 3b) = 7(2a) + 7(3b)$ . However, the first is the standard factored form (GCF factored once). The second form shows distribution but should be simplified.
- 5) **Choice A is correct.** (7.SP.1-7.SP.4) Month 1's dots cluster around  $71\text{--}73^\circ\text{F}$  (x-coordinates 1–3.5 map to  $70\text{--}75^\circ\text{F}$ ), a narrow range of  $2^\circ\text{F}$ . Month 2's dots span from 71 to  $82^\circ\text{F}$  (x-coordinates 1–12, range  $\approx 11^\circ\text{F}$ ). Month 1 is more consistent.
- 6) **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.
- 7) **Choice C is correct.** (7.SP.5-7.SP.8) By the counting principle:  $2 \times 3 \times 4 = 24$  different sandwiches.
- 8) **Choice B is correct.** (7.SP.5-7.SP.8) Red sections: 2 out of 4.  $P(\text{red}) = \frac{2}{4} = \frac{1}{2}$ .
- 9) **Choice B is correct.** (7.SP.5-7.SP.8) Independent events:  $P(A \text{ and } B) = \frac{1}{5} \cdot \frac{1}{3} = \frac{1}{15}$ .
- 10) **Choice D is correct.** (7.SP.6) Experimental probability of car use =  $\frac{145}{300} \approx 0.483$ . Expected in 2400 students:  $0.483 \times 2400 \approx 1160$ .
- 11) **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.
- 12) **Choice C is correct.** (7.SP.5-7.SP.8)  $\frac{1}{4} = 0.25 = 25\%$ .
- 13) **Choice D is correct.** (7.RP.3) Percent error =  $\frac{|850 - 1000|}{1000} \times 100\% = \frac{150}{1000} \times 100\% = 15\%$ .
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) Area =  $4(2w + 3) = 8w + 12$ . The model shows  $4 \times 2w = 8w$  and  $4 \times 3 = 12$ .
- 15) **Choice D is correct.** (7.RP.3) Interest owed:  $6500 - 5000 = \$1500$ .  $1500 = 5000 \times r \times 5 \Rightarrow 1500 = 25000r \Rightarrow r = 0.06 = 6\%$ .
- 16) **Choice A is correct.** (7.NS.1-7.NS.3)  $6 - (-1) = 6 + 1 = 7$ .
- 17) **The correct answer is 157.** (7.G.4-7.G.6)  $V = \pi r^2 h \approx 3.14 \times (2.5)^2 \times 8 = 3.14 \times 6.25 \times 8 = 157 \text{ m}^3$ .
- 18) **Choice C is correct.** (7.RP.3) 55% of 200 is  $0.55 \times 200 = 110$  students.
- 19) **Choice D is correct.** (7.RP.3) Markup =  $0.40 \times 35 = \$14$ . Selling price =  $35 + 14 = \$49$ .
- 20) **The correct answer is A, D.** (7.G.4-7.G.6) A is correct because  $V = Bh$ , so  $h = V/B$ . D is correct because volume is measured in cubic units. B is false because  $2 \times 3 \times 5 = 30 \text{ m}^3$ , not  $10 \text{ m}^3$ . C is false because the base shape affects the base area.
- 21) **Choice D is correct.** (7.NS.1b)  $-9$  and  $9$  are opposites; they sum to zero.  $-9 + 9 = 0$ .
- 22) **Choice B is correct.** (7.EE.1) By commutativity,  $ab = ba$ , so  $6ab$  and  $3ba$  are like terms. Combined:  $6ab + 3ba = 6ab + 3ab = 9ab$ .
- 23) **Choice C is correct.** (7.RP.1-7.RP.3) Divide the real length by the scale factor:  $72 \div 72 = 1$  meter.
- 24) **Choice A is correct.** (7.EE.1-7.EE.2) Half of  $c$  is  $\frac{c}{2}$ . Four less than  $\frac{c}{2}$  is  $\frac{c}{2} - 4$ .
- 25) **Choice B is correct.** (7.EE.1-7.EE.2) Factor out the GCF 6 and the negative:  $-6m + 18 = -6(m - 3)$ . Check:  $-6(m - 3) = -6m + 18$ .
- 26) **Choice C is correct.** (7.SP.1-7.SP.4) 50% of 10,000 =  $0.50 \times 10,000 = 5000$  visitors.
- 27) **Choice C is correct.** (7.RP.3) Emergency savings =  $8\% \times \$48,000 = 0.08 \times 48000 = \$3,840$ .
- 28) **Choice A is correct.** (7.NS.1-7.NS.3)  $0.8 - 1.2 = -0.4$ .
- 29) **The correct answer is 8.5.** (7.SP.1-7.SP.4) The sample mean of 8.5 hours is used to estimate the population parameter. Since the sample is random and reasonably sized, this sample mean is a good estimate for the entire population.
- 30) **Choice B is correct.** (7.NS.1-7.NS.3)  $2\frac{2}{5} = \frac{12}{5}$ . Then  $\frac{12}{5} \div \frac{4}{5} = \frac{12}{5} \times \frac{5}{4} = \frac{12}{4} = 3$ .



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## Hi, Math Hero!

◇ This full-length book gave you ten complete Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. You showed up for Grade 7 practice again and again. That is what real growth looks like: steady effort, honest review, and a willingness to try. ◇

★ **Remember this:** A math hero is not someone who never misses a question. A math hero learns from the miss and comes back stronger. ★

### Hero Habits

- **Courage:** You try problems that are not automatic.
- **Honesty:** You review what needs work.
- **Patience:** You let skills grow over time.
- **Pride:** You recognize the effort you gave.

**Grade 7 test-day tip:** Save one solved problem you are proud of. Looking back at progress helps motivation stay strong.

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Hero Guide

# PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 10 full-length Math practice tests and 2 extra 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:

**10** Full-Length Printed Tests

**2** Online Practice Tests

 Detailed Answer Explanations



## MORE PRACTICE. GREATER RESULTS.

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## 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

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



## 2 EXTRA 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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