10 West Virginia WVGSA PRACTICE TESTS

GRADE 7 MATH

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

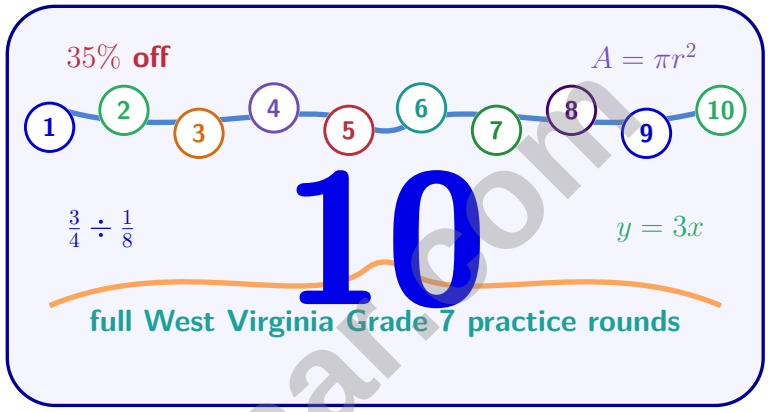
10 PRINTED TESTS +2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 West Virginia WVGSA Grade 7 Math Practice Tests

West Virginia Grade 7 WVGSA Practice for ridge-line practice across rational numbers, proportional relationships, equations, geometry, and data



Ten complete 40-question Grade 7 WVGSA 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, West Virginia Grade 7 Problem Solver!

Ten focused rounds for sharper West Virginia WVGSA math thinking

This book gives you ten full Grade 7 WVGSA 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 West Virginia 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 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.

West Virginia 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 West Virginia WVGSA 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 West Virginia 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.

Table of Contents

1) Expand: $-7(3n - 2)$

- ☐ A. $-21n - 14$
- ☐ B. $21n - 14$
- ☐ C. $-21n + 14$
- ☐ D. $-10n - 2$

2) A skateboard costs \$85, and safety gear costs \$12 per item. Marcus buys a skateboard and 4 safety items. Which equation represents his total cost C?

- ☐ A. $C = 85 + 4 + 12$
- ☐ B. $C = 4(85 + 12)$
- ☐ C. $C = 85 + 4(12)$
- ☐ D. $C = (85 + 12)(4)$

3) Expand and simplify: $2(3a + 4b) - 5a$.

- ☐ A. $6a + 8b - 5a = a + 8b$
- ☐ B. $a + 4b$
- ☐ C. $6a + 4b$
- ☐ D. $11a + 8b$

4) Solve for x: $4(x - 3) = 12$

- ☐ A. $x = 0$
- ☐ B. $x = 3$
- ☐ C. $x = 6$
- ☐ D. $x = 9$

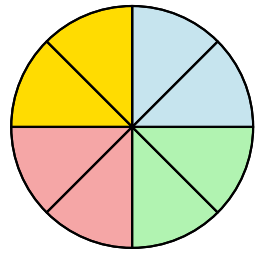
5) Two chemical batches' purity levels (percentages):

Batch	Q1	Q3	Median
Batch Alpha	88	94	91
Batch Beta	90	93	91.5

For consistent, high-purity production, which batch is superior?

- ☐ A. Batch Alpha (wider IQR shows diversity in purity)
- ☐ B. Batch Beta (narrower IQR = tighter quality, higher Q1)
- ☐ C. Both are identical
- ☐ D. Cannot determine without knowing ranges

6)



A spinner has 8 equal sections: 2 blue, 2 yellow, 2 red, 2 green. If the spinner is spun, which outcome has probability $\frac{1}{4}$?

- ☐ A. Landing on blue
- ☐ B. Landing on red or green
- ☐ C. Landing on all colors
- ☐ D. Landing on blue or yellow

7) A student rolls a die labeled 1 to 6 and picks a fruit from {Apple, Orange, Banana}. The student claims there are 18 outcomes in the sample space. Is this correct?

- ☐ A. Yes, $6 \times 3 = 18$
- ☐ B. No, there are only 9 outcomes
- ☐ C. No, there are 24 outcomes
- ☐ D. No, there are 36 outcomes

8) What is $P(A \text{ and } B)$ if event A has probability $\frac{1}{3}$ and event B has probability $\frac{1}{4}$, and the events are independent?

- ☐ A. $\frac{1}{7}$
- ☐ B. $\frac{2}{7}$
- ☐ C. $\frac{1}{12}$
- ☐ D. $\frac{7}{12}$

9) A game uses a spinner divided into 8 equal sections. The spinner was spun 800 times. One section appeared 85 times. Comparing the experimental and theoretical probabilities, which statement is true?

- ☐ A. Both equal $\frac{1}{8}$.
- ☐ B. Experimental is $\frac{85}{800}$; theoretical is $\frac{1}{8}$.
- ☐ C. Experimental is higher than theoretical.
- ☐ D. Theoretical is higher than experimental.

10) Which event has a probability of 0 (impossible)?

☐ A. Rolling a 7 on a standard six-sided die
☐ B. Flipping a coin and getting tails
☐ C. Drawing a number from 1 to 10
☐ D. Picking a blue marble from a bag of blue marbles

11) A chord connects two points on a circle with radius 8 inches. What is the maximum possible length of this chord?

12) **Item Cost Estimates**

Item	Estimated Cost	Actual Cost
Shirt	$22	$20

What is the percent error for the shirt cost estimate?

☐ A. 91%
☐ B. 9.1%
☐ C. 11%
☐ D. 10%

13)

Principal	Rate	Time (years)	Interest
$500	3%	2	?

Based on the table above, how much interest will be earned?

☐ A. $15
☐ B. $60
☐ C. $45
☐ D. $30

1) A savings account offers 2% annual interest on a balance of \$500. How much interest will be earned in one year?

☐ A. \$5
☐ B. \$25
☐ C. \$15
☐ D. \$10

2) In a back-to-back stem-and-leaf plot, Class A (left) shows leaves $6, 3, 1$ for stem 8, and Class B (right) shows leaves $2, 5, 7$. Reading from the plot, which value belongs to Class A with stem 8?

☐ A. 82
☐ B. 83
☐ C. 85
☐ D. 87

3) A triangular prism has volume 126 cubic inches. If the triangular base has area 18 in^2, what is the height of the prism?

☐ A. 7 in
☐ B. 8 in
☐ C. 9 in
☐ D. 144 in

4) A probability of $\frac{1}{4}$ is what percent?

☐ A. 4%
☐ B. 14%
☐ C. 25%
☐ D. 75%

Like Terms Table

x terms	**y** terms
$3x, 5x, -2x$	$4y, y, -3y$

5) Which expression is equivalent to the combined like terms shown in the table?

☐ A. $6x + 2y$
☐ B. $8x + 5y$
☐ C. $-10xy$
☐ D. $10x + 2y$

6) A cube has surface area 150 cm^2. What is the edge length of the cube?

☐ A. 5 cm
☐ B. 6 cm
☐ C. 25 cm
☐ D. 30 cm

7) A survey of 320 households shows that 15% own a garden. How many households own a garden?

☐ A. 15
☐ B. 32
☐ C. 48
☐ D. 68

8) Evaluate $5a + 3b - 2$ when $a = 2$ and $b = -1$.

☐ A. 15
☐ B. 8
☐ C. 11
☐ D. 5

9) A store offers a 32% discount on a pair of jeans originally priced at $75. What is the sale price?

10) Factor: $18ab + 27a$

☐ A. $9a(2b + 3)$
☐ B. $18(ab + 1.5a)$
☐ C. $a(18b + 27)$
☐ D. $3(6ab + 9a)$

1) A student rents a bike for \$8 per hour plus a \$5 flat rental fee. If they ride for h hours and pay \$45 total, how many hours did they ride?

☐ A. 3 hours
☐ B. 5 hours
☐ C. 6 hours
☐ D. 8 hours

2) A video streaming service found that 8% of its $50,000$ users watch documentaries. How many users watch documentaries?

☐ A. 800
☐ B. 4000
☐ C. 6000
☐ D. 8000

3) A grocery store offers a \$5 discount coupon to customers who complete a short survey in the store. Which sampling bias is introduced by offering a reward?

☐ A. Convenience bias
☐ B. Selection bias
☐ C. Measurement bias
☐ D. Voluntary response bias

4) Which expression equals $(2s - 10) - (s - 3)$?

☐ A. $s - 7$
☐ B. $s - 13$
☐ C. $3s - 13$
☐ D. $s + 7$

5) Simplify: $(b^3)^4$

☐ A. b^7
☐ B. b^{12}
☐ C. b^{81}
☐ D. b^{64}

6) A pizza restaurant charges \$12 for a large pizza and \$2 for each topping. If the total is \$22, which equation represents t, the number of toppings?

☐ A. $2 + 12t = 22$
☐ B. $12 + 2t = 22$
☐ C. $12(t + 2) = 22$
☐ D. $2t = 22 + 12$

7) A scatter plot shows the relationship between study hours (x-axis) and test score (y-axis) for 10 students. The plot shows a general upward trend, but Student Z studied 4 hours and scored 95, while Student Y studied 4.5 hours and scored 88. Based on this scatter plot, can you conclude that studying exactly 4 hours guarantees a score of 95?

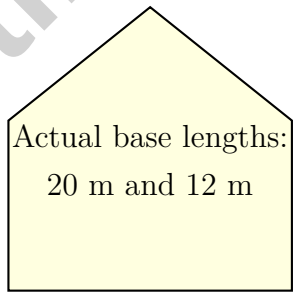
8) Solve: $2.5x + 1 = 6$

- ☐ A. $x = 1$
- ☐ B. $x = 2$
- ☐ C. $x = 3$
- ☐ D. $x = 4$

9) Solve: $2x + 8 = 24$

- ☐ A. $x = 6$
- ☐ B. $x = 8$
- ☐ C. $x = 10$
- ☐ D. $x = 12$

10)



Scale: 1 cm = 4 m

A scale drawing of a trapezoid uses a scale of 1 cm : 4 m. If the actual bases are 20 m and 12 m, what are the drawing's base lengths?

- ☐ A. 5 cm and 3 cm
- ☐ B. 4 cm and 2.4 cm
- ☐ C. 8 cm and 4 cm
- ☐ D. 20 cm and 12 cm

West Virginia WVGSA 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 West Virginia WVGSA practice test.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice C is correct.** 7.EE.1-7.EE.2 Distribute -7: $-7(3n) - 7(-2) = -21n + 14$. Negative times negative is positive.
2) **Choice C is correct.** 7.EE.4a Skateboard is \$85 and safety gear is $4 \times \$12 = \$48$. Total equation: $C = 85 + 4(12) = \$85 + \$48 = \$133$.
3) **Choice A is correct.** 7.EE.1-7.EE.2 Distribute: $2(3a)+2(4b)-5a = 6a+8b-5a$. Combine a terms: $6a-5a+8b = a+8b$.
4) **Choice C is correct.** 7.EE.4a Distribute: $4x - 12 = 12$. Add 12: $4x = 24$. Divide by 4: $x = 6$.
5) **Choice B is correct.** 7.SP.1-7.SP.4 Batch Alpha: IQR = 94 - 88 = 6. Batch Beta: IQR = 93 - 90 = 3. Batch Beta's smaller IQR (tighter middle 50%) and higher Q1 (90 vs. 88) indicate more consistently high-purity output.
6) **Choice A is correct.** 7.SP.5-7.SP.8 Each color has 2 sections out of 8: $\frac{2}{8} = \frac{1}{4}$. B: $\frac{4}{8} = \frac{1}{2}$. D: $\frac{4}{8} = \frac{1}{2}$. C is not a single outcome.
7) **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.
8) **Choice C is correct.** 7.SP.5-7.SP.8 $P(A \text{ and } B) = P(A) \cdot P(B) = \frac{1}{3} \cdot \frac{1}{4} = \frac{1}{12}$.
9) **Choice B is correct.** 7.SP.6 Experimental: $\frac{85}{800} \approx 0.106$. Theoretical: $\frac{1}{8} = 0.125$. The experimental probability came from the observed data.
10) **Choice A is correct.** 7.SP.5-7.SP.8 A standard die only has faces 1–6, so rolling a 7 is impossible (probability = 0).
11) **The correct answer is 16 .** 7.G.4-7.G.6 The longest chord is the diameter: $d = 2r = 2 \times 8 = 16$ inches.
12) **Choice D is correct.** 7.RP.3 Percent error = $\frac{|22-20|}{20} \times 100\% = \frac{2}{20} \times 100\% = 10\%$.
13) **Choice D is correct.** 7.RP.3 $I = 500 \times 0.03 \times 2 = \$30$.
14) **Choice D is correct.** 7.NS.1-7.NS.3 $11 - (-6) = 11 + 6 = 17$.
15) **Choice C is correct.** 7.RP.3 $\frac{78}{120} = \frac{13}{20} = 0.65 = 65\%$.
16) **Choice D is correct.** 7.RP.3 Discount = $0.225 \times 80 = \$18$. Sale price = $80 - 18 = \$62$.
17) **Choice D is correct.** 7.NS.1b Step-by-step: $-10 + 5 = -5$, then $-5 + (-3) = -8$. Or combine negatives first: $-10 + (-3) = -13$, then $-13 + 5 = -8$.
18) **Choice C is correct.** 7.EE.1 Option C has no like terms remaining. All other options have like terms that can still be combined.
19) **Choice B is correct.** 7.SP.1-7.SP.4 15% of 300 = $0.15 \times 300 = 45$ gallons.
20) **Choice D is correct.** 7.RP.1-7.RP.3 Using scale 1 cm = 2.5 m: $6 \times 2.5 = 15$ m long; $4 \times 2.5 = 10$ m wide.
21) **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 $2 \times 3 \times 5 = 30$ m^3, not 10 m^3. C is false because the base shape affects the base area.
22) **Choice B is correct.** 7.EE.1-7.EE.2 Substitute: $(3)^2 + 3(3) - 5 = 9 + 9 - 5 = 13$.
23) **Choice A is correct.** 7.EE.1-7.EE.2 GCF of 7 and 28 is 7. Factor: $7p + 28 = 7(p + 4)$.
24) **Choice A is correct.** 7.EE.4b "A number plus 8" translates to $x + 8$, and "is less than" translates to $<$.
25) **Choice D is correct.** 7.RP.1-7.RP.3 From unit rate $(1, 0.7)$, at $x = 2$, $y = 2 \times 0.7 = 1.4$ meters.
26) **Choice A is correct.** 7.NS.1-7.NS.3 Same denominator: $\frac{5}{8} - \frac{7}{8} = -\frac{2}{8} = -\frac{1}{4}$.
27) **Choice D is correct.** 7.NS.1-7.NS.3 $8 \div \frac{1}{4} = 8 \times \frac{4}{1} = 32$.
28) **Choice B is correct.** 7.NS.2d Divide $1 \div 7 = 0.142857142857\ldots$ The block 142857 repeats.
29) **The correct answer is 16 m .** 7.G.4-7.G.6 $C = \pi d \Rightarrow 50.24 = 3.14d \Rightarrow d = 50.24 \div 3.14 = 16$ m.
30) **Choice B is correct.** 7.NS.1-7.NS.3 Net change: $150 - 210 = -60$ feet.
31) **Choice A is correct.** 7.NS.1-7.NS.3 Total change = $\$125 - \$75 + \$200 = \$250$.
32) **Choice A is correct.** 7.NS.1-7.NS.3 $2.75 \times 10^{-6} = 0.00000275$. Move decimal 6 places left.
33) **Choice A is correct.** 7.EE.1-7.EE.2 Combine like terms: $(-3q + 8q) + (-7 + 2) = 5q - 5$.

Author's Note

A Math Hero Moment

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.

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.

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

- 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!

VISIT TESTINAR.COM/MATH7

FOR MORE PRACTICE TESTS AND LEARNING RESOURCES.

PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED