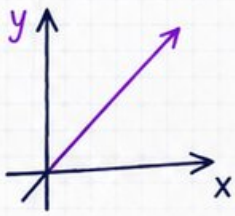
3 West Virginia WVGSA PRACTICE TESTS

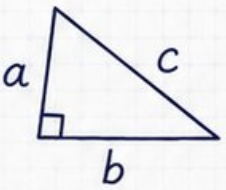
GRADE 7 MATH

- 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

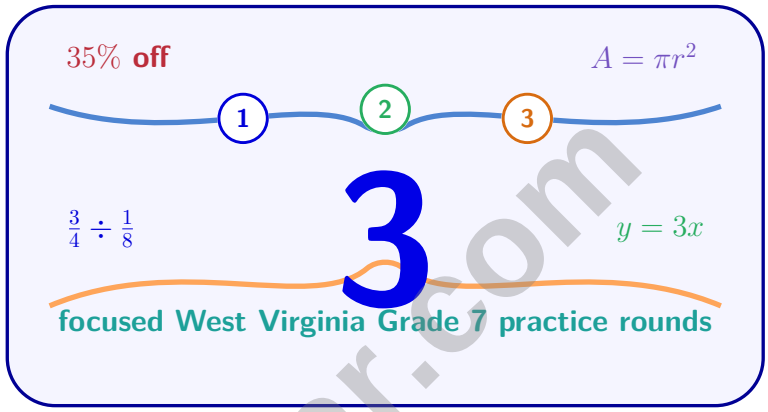
USE THESE TWO ADDITIONAL ONLINE PRACTICE TESTS

FOR EXTRA REVIEW AFTER THE PRINTED TESTS IN THIS BOOK.

- Build Confidence
- Strengthen Math Skills
- Detailed Answers & Explanations
- Improve Test Performance

3 West Virginia WVGSA Grade 7 Math Practice Tests

West Virginia Grade 7 Test Prep with Review and Explanations



Three 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!

Three focused rounds for sharper WVGSA math thinking

This book gives you three 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 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.

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?

Three WVGSA 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.

Table of Contents

1) A scientist measures a solution's volume as $\frac{7}{8}$ liter. She uses $\frac{1}{8}$ liter, then adds $\frac{3}{8}$ liter. What is the final volume?

☐ A. $\frac{3}{4}$ liter
☐ B. $\frac{9}{8}$ liters
☐ C. $\frac{1}{2}$ liter
☐ D. 1 liter

2) **Error Analysis: Using Wrong Denominator**

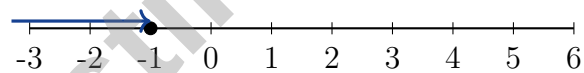
A student calculated percent error as $\frac{|28-35|}{28} \times 100\%$ instead of the correct formula. What error did the student make?

☐ A. Used estimate in denominator instead of actual
☐ B. Forgot to multiply by 100%
☐ C. Subtracted wrong order
☐ D. Divided by 28 instead of 100

3) Expand: $-3(2a - 5)$

☐ A. $-6a - 15$
☐ B. $-6a + 15$
☐ C. $6a - 15$
☐ D. $-6a - 5$

4) Which inequality is represented by the number line below?



☐ A. $x \leq -1$
☐ B. $x < -1$
☐ C. $x \geq -1$
☐ D. $x > -1$

5) Using the simple interest formula $I = Prt$, how much interest does \$800 earn at an annual rate of 5% over 3 years?

☐ A. \$40
☐ B. \$240
☐ C. \$125
☐ D. \$120

6) Simplify: $7a + 4b - 2a + 3b - b$

☐ A. $5a + 6b$
☐ B. $5a + 5b$
☐ C. $9a + 6b$
☐ D. $5a + 7b$

7) A die is rolled to simulate an event with probability $\frac{1}{3}$. Which outcomes on the die could represent a success?

☐ A. Rolling a 1 or 2
☐ B. Rolling a 1 or 2 or 3
☐ C. Rolling a 1, 2, 3, or 4
☐ D. Rolling a 1, 2, 3, 4, or 5

8) A textbook page is 8 inches by 10 inches. For a digital version, the page is scaled by a factor of 0.75. What are the digital dimensions?

☐ A. 12 inches × 15 inches
☐ B. 8.75 inches × 10.75 inches
☐ C. 5.33 inches × 6.67 inches
☐ D. 6 inches × 7.5 inches

9)

Sport	Students	Percent
Basketball	36	45%
Soccer	20	25%
Other	24	30%

The table shows sports preferences. If 45% of 80 students play basketball, how many is that?

☐ A. 30
☐ B. 45
☐ C. 40
☐ D. 36

10) A sweater is priced at \$80. A customer uses a coupon for 15% off. What is the sale price?

☐ A. \$65
☐ B. \$76
☐ C. \$64
☐ D. \$68

11) Evaluate $-2 + (-5) + 3 + 8$.

☐ A. -18
☐ B. -4
☐ C. 4
☐ D. 18

12) Which shows $20y + 24$ factored completely?

☐ A. $4(5y + 6)$
☐ B. $2(10y + 12)$
☐ C. $8(2.5y + 3)$
☐ D. $6(3.33y + 4)$

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

☐ A. $n + 2 \neq 7$
☐ B. $n + 2 = 7$
☐ C. $n \neq 5$
☐ D. $n + 7 \neq 2$

14) The difference between two integers is -9. If one integer is 4, what is the other integer? (Hint: difference means subtract.)

1) A student incorrectly says a graph shows a proportional relationship. The student made an error. What was it?
The graph shows a line from $(0, 2)$ to $(4, 10)$.

☐ A. The line is too steep
☐ B. The points are not whole numbers
☐ C. The line has negative slope
☐ D. The line does not pass through the origin

2) If a scale drawing has a scale of $2 : 5$, which of the following is true?

☐ A. The drawing is smaller than the actual object.
☐ B. The drawing is larger than the actual object.
☐ C. The drawing and the object are the same size.
☐ D. Cannot be determined without more information.

3) A rectangular field on a map is 9 cm by 12 cm at a scale of 1 cm : 0.75 km. If the scale is changed to 1 cm : 1.5 km, what will be the new length?

☐ A. 6 cm
☐ B. 12 cm
☐ C. 18 cm
☐ D. 24 cm

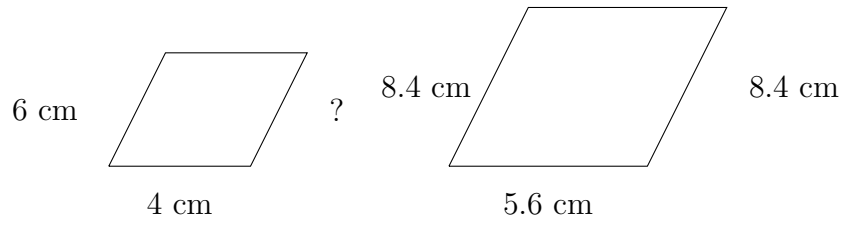
4) If a hexagonal prism is cut by a plane perpendicular to its hexagonal bases, what shapes are possible for the cross-section?

☐ A. Only rectangles
☐ B. Only parallelograms
☐ C. Rectangles and parallelograms
☐ D. Triangles and quadrilaterals only

5) An angle is 26° less than its supplement. What is the measure of the larger angle?

☐ A. 77°
☐ B. 103°
☐ C. 154°
☐ D. 206°

6)



The trapezoids are similar. Find the missing side (marked with ?) in the left trapezoid.

- ☐ A. 4.2 cm
- ☐ B. 5 cm
- ☐ C. 5.6 cm
- ☐ D. 6 cm

7) A plate has diameter 10 inches. Using $\pi \approx \frac{22}{7}$, approximately what is its circumference?

- ☐ A. $\frac{220}{7}$ in
- ☐ B. $\frac{110}{7}$ in
- ☐ C. $\frac{440}{7}$ in
- ☐ D. $\frac{80}{7}$ in

8) An athlete's personal record was 12 seconds. After training, the record improved to 10.56 seconds. What is the percent decrease in time?

9) A circle has a diameter of 18 meters. Which step is correct to find the area?

- ☐ A. First find $r = 9$ m, then compute $A = \pi \times 9$
- ☐ B. First find $r = 9$ m, then compute $A = \pi \times 9^2$
- ☐ C. Use $A = \pi \times 18$ directly
- ☐ D. Use $A = \pi \times 18^2$ directly

1) A rectangular prism with a volume of 360 m^3 has a base area of 40 m^2. Find the height.

☐ A. 4 m
☐ B. 7 m
☐ C. 9 m
☐ D. 14400 m

2) A card is drawn from a standard deck of 52 cards. What is $P(\text{King})$?

☐ A. $\frac{1}{52}$
☐ B. $\frac{1}{13}$
☐ C. $\frac{1}{4}$
☐ D. $\frac{1}{2}$

3) A fitness center charges a $30 enrollment fee and $45 per month. What is the total cost for 6 months of membership?

☐ A. $240
☐ B. $270
☐ C. $300
☐ D. $330

4) A bank account starts with $750 and earns 9% annual compound interest. After how many complete years does the balance exceed $1,000?

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

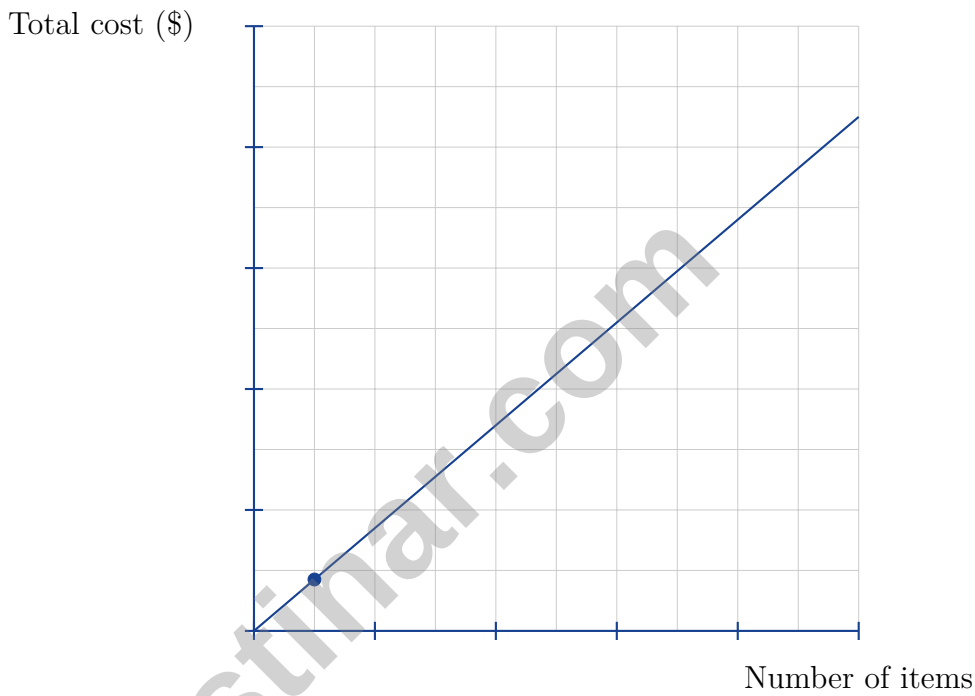
5) Your checking account statement shows a current balance of $1 240. You have written checks totaling $340 that have not yet cleared. What is your actual available balance?

☐ A. $800
☐ B. $1 240
☐ C. $1 000
☐ D. $900

6) A subscription service costs \$10 per month. After a 50% price increase, what is the new monthly cost?

☐ A. \$5
☐ B. \$12
☐ C. \$15
☐ D. \$20

7)



From this proportional relationship graph, identify the unit-rate point and find the cost per item.

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 B is correct.** 7.NS.1-7.NS.3 Volume $= \frac{7}{8} - \frac{1}{8} + \frac{3}{8} = \frac{7-1+3}{8} = \frac{9}{8}$ liters.

2) **Choice A is correct.** 7.RP.3 The correct formula requires the actual value in the denominator. This student placed the estimate (28) in the denominator instead. Correct: $\frac{|28-35|}{35} \times 100\% \approx 20\%$. Student's incorrect answer: $\frac{|28-35|}{28} \times 100\% = 25\%$.

3) **Choice B is correct.** 7.EE.1-7.EE.2 Distribute -3 to both terms: $-3(2a) = -6a$ and $-3(-5) = +15$ (negative times negative is positive). Result: $-6a + 15$.

4) **Choice A is correct.** 7.EE.4b A closed circle at -1 with an arrow pointing left indicates all values less than or equal to -1, which is $x \leq -1$.

5) **Choice D is correct.** 7.RP.3 $I = Prt = 800 \times 0.05 \times 3 = \$120$.

6) **Choice A is correct.** 7.EE.1 Combine: $(7-2)a + (4+3-1)b = 5a + 6b$.

7) **Choice A is correct.** 7.SP.5-7.SP.8 $\frac{2}{6} = \frac{1}{3}$. Rolling a 1 or 2 represents 2 favorable outcomes out of 6 equally likely outcomes.

8) **Choice D is correct.** 7.RP.1-7.RP.3 Multiply each dimension by 0.75: $8 \times 0.75 = 6$ inches; $10 \times 0.75 = 7.5$ inches.

9) **Choice D is correct.** 7.RP.3 45% of 80 is $0.45 \times 80 = 36$ students.

10) **Choice D is correct.** 7.RP.3 Discount $= 0.15 \times 80 = \$12$. Sale price $= 80 - 12 = \$68$.

11) **Choice C is correct.** 7.NS.1b Combine step-by-step: $-2 + (-5) = -7$, then $-7 + 3 = -4$, then $-4 + 8 = 4$. Or group: $(-2-5) + (3+8) = -7 + 11 = 4$.

12) **Choice A is correct.** 7.EE.1-7.EE.2 GCF of 20 and 24 is 4. Factor: $20y + 24 = 4(5y + 6)$. Choice B is not completely factored.

13) **Choice A is correct.** 7.EE.4b "The sum of a number and 2" is $n + 2$; "is not equal to 7" is $\neq 7$.

14) **The correct answer is** 13 **.** 7.NS.1-7.NS.3 If the difference is $4 - x = -9$, then $x = 4 - (-9) = 4 + 9 = 13$. Check: $4 - 13 = -9$ ✓.

15) **Choice D is correct.** 7.G.4-7.G.6 Correct $SA = 2(63 + 18 + 14) = 190$ cm^2. Missing one $9 \times 2 = 18$ cm^2 face: incorrect $SA = 190 - 18 = 172$ cm^2. Ratio: $\frac{172}{190} \approx 0.905 = 90.5\% \approx 91\%$.

16) **Choice D is correct.** 7.RP.1-7.RP.3 Rate is $\frac{200 \text{ oz}}{4 \text{ sec}} = 50$ ounces per second.

17) **Choice D is correct.** 7.RP.1-7.RP.3 The unit-rate point $(1, 0.8)$ shows $k = 0.8$, so the equation is $y = 0.8x$.

18) **Choice B is correct.** 7.NS.1-7.NS.3 Sign rule: negative divided by positive always gives negative.

19) **Choice C is correct.** 7.EE.1-7.EE.2 Substitute: $2(5) + 3(2) = 10 + 6 = 16$.

20) **Choice A is correct.** 7.G.1-7.G.5 The purple triangle vertices have y-values $1, 1, 3$, which become $-1, -1, -3$ in the orange triangle, indicating a reflection over the x-axis.

21) **Choice C is correct.** 7.SP.1-7.SP.4 Only people motivated to respond (those with strong opinions) participate, making the sample non-representative of all customers.

22) **The correct answer is B,D.** 7.SP.1-7.SP.4 Total is $280 + 420 + 100 = 800$. Online: $280/800 = 0.35 = 35\%$, so B is correct. In-store: $420/800 = 0.525 = 52.5\%$, so D is correct. A is wrong (not exactly 50%). C is wrong ($100/800 = 12.5\%$, not 10%).

23) **The correct answer is** $10/3$ **mph .** 7.RP.1-7.RP.3 Unit rate $= \frac{5/6}{1/4} = \frac{5}{6} \times 4 = \frac{20}{6} = \frac{10}{3} = 3\frac{1}{3}$ mph.

24) **Choice A is correct.** 7.SP.5-7.SP.8 Blue or red: $\frac{4}{8}$. Not blue or red: $1 - \frac{4}{8} = \frac{4}{8} = \frac{1}{2}$.

25) **Choice B is correct.** 7.SP.5-7.SP.8 Even cards: {2, 4} = 2 outcomes. Heads: 1 outcome. Favorable: 2H, 4H = 2 outcomes.

26) **The correct answer is** 10 **.** 7.RP.1-7.RP.3 Juice to ginger ale is $2:3$. Total ratio parts: $2+3=5$. Juice: $\frac{2}{5} \times 25 = 10$ liters.

27) **Choice D is correct.** 7.RP.3 To convert a decimal to a percent, multiply by 100: $0.45 \times 100 = 45\%$. Alternatively, $0.45 = \frac{45}{100} = 45\%$.

28) **Choice D is correct.** 7.RP.3 Simple interest $= P \times r \times t = \$1{,}000 \times 0.05 \times 1 = \$50$.

Hi, Brave Learner!

◇ No one gets stronger by only doing easy problems. The questions that slowed you down were part of the training. This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

⋆ **Remember this:** Mistakes are not proof that you cannot do math. They are directions. They show what to review, what to ask about, and what to practice next. ⋆

How to Use Mistakes

- **Name It:** Was it reading, setup, arithmetic, or checking?
- **Fix It:** Correct the work while the question is fresh.
- **Repeat It:** Try one similar problem soon.
- **Remember It:** Write the lesson in your own words.

Grade 7 test-day tip: Treat every corrected error as a point you are preparing to earn next time.

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

Jay Daie

Your Brave-Learning Coach

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.

THIS BOOK INCLUDES:

- **3** 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.

Detailed Answers & Explanations
Learn from clear explanations and step-by-step solutions.

Improve Test 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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FOR MORE PRACTICE TESTS AND LEARNING RESOURCES.

PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY