

3

Connecticut

Smarter Balanced

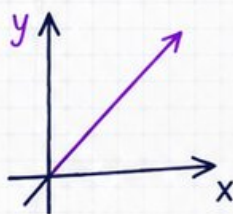
GRADE

7

MATH

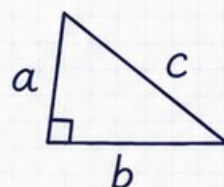
PRACTICE TESTS

- ✓ 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



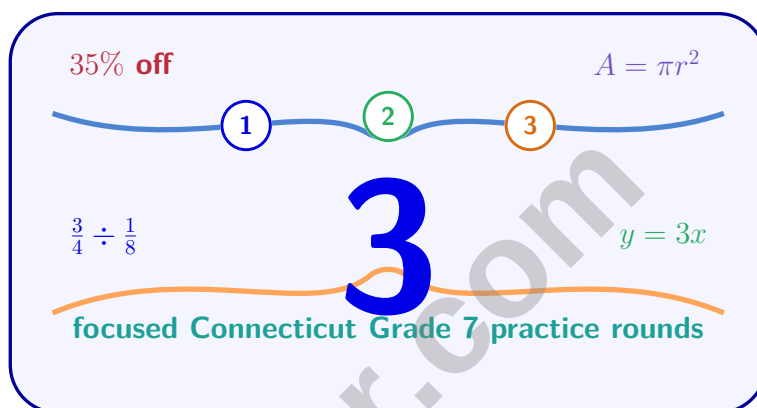
Detailed Answers
& Explanations



Improve Test
Performance

3 Connecticut Smarter Balanced Grade 7 Math Practice Tests

Grade 7 Smarter Balanced Practice with Guided Review and Explanations



Three complete 40-question Grade 7 Smarter Balanced 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, Connecticut Grade 7 Problem Solver!

Three focused rounds for sharper Smarter Balanced math thinking

This book gives you three full Grade 7 Smarter Balanced 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 Connecticut 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.

Connecticut 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 Smarter Balanced 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

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1) A teacher buys 5 notebooks at $\$x$ each and spends a total of $\$45$ (including a $\$5$ coupon discount). What is the price per notebook?

☐ A. $\$8$ ☐ C. $\$10$ ☐ B. $\$9$ ☐ D. $\$12$

2) A librarian predicted 900 visitors in a month, but 1000 actually visited. What is the percent error?

☐ A. 11.1%☐ C. 9%☐ B. 100%☐ D. 10%

3) Expand and simplify: $7(t - 2) + 3(4 - t)$

☐ A. $4t - 2$ ☐ C. $6t + 12$ ☐ B. $10t + 12$ ☐ D. $8t - 2$

4) Which number line represents the inequality $x \leq 3$?

☐ A. Open circle at 3 pointing left☐ C. Open circle at 3 pointing right☐ B. Closed circle at 3 pointing left☐ D. Closed circle at 0 pointing left

5) A car loan of $\$15000$ is taken at a simple interest rate of 7% per year. How much total interest will be paid over 6 years?

☐ A. $\$4500$ ☐ C. $\$7000$ ☐ B. $\$10500$ ☐ D. $\$6300$ 

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6) A poster measures 24 inches by 36 inches. It is reduced to fit in a frame with a scale of 1 : 4. What are the new dimensions?

☐ A. 12 inches $\times$ 18 inches

☐ C. 6 inches $\times$ 9 inches

☐ B. 4 inches $\times$ 6 inches

☐ D. 20 inches $\times$ 32 inches

7) If you have -5 dollars (meaning you owe 5 dollars) and you lose an additional 12 dollars, what is your new balance? Express your answer as an integer with the appropriate sign.

8) What is $-11 + 14$?

☐ A. 25

☐ C. -3

☐ B. -25

☐ D. 3

9) 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?



10) Simplify: $5x + 3y - 2x + 4y$

☐ A. $3x + 7y$

☐ C. $3x - y$

☐ B. $7x + 7y$

☐ D. $10xy$

11) A simulation consists of rolling a die and flipping a coin, recording both results. This is the compound event. How many equally likely outcomes are in the sample space?

☐ A. 6

☐ C. 12

☐ B. 8

☐ D. 36

12) A fruit stand sells apples for \$1.50 each with no discount. What is the constant of proportionality between number of apples and total cost?

13) A student had \$50 and spent \$15 on lunch. What percent of the money was spent?

☐ A. 20%

☐ C. 30%

☐ B. 25%

☐ D. 40%

14) A store bought items for \$500 total and marked them up by 60%. What is the selling price for all items?

☐ A. \$3000

☐ C. \$300

☐ B. \$500

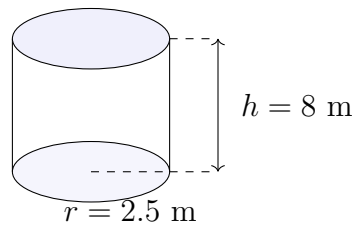
☐ D. \$800



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- 1) An account earning 3% annual compound interest starts with \$1,000. Approximately how many years until the balance reaches \$1,100?
- ☐ A. 2 years ☐ C. 3.5 years
☐ B. 5 years ☐ D. 3 years
- 2) A scale model of a rectangular stage is 10 cm wide. The scale is 1 cm : 0.4 m. How many meters wide is the actual stage?
- ☐ A. 0.4 m ☐ C. 4 m
☐ B. 2.5 m ☐ D. 40 m
- 3) Angle P and angle Q are vertical angles. If angle $P = 84^\circ$, what is the measure of angle Q ?
- ☐ A. 6° ☐ C. 276°
☐ B. 96° ☐ D. 84°
- 4) A point is moved from $(-3, 1)$ to $(4, 6)$ by a single transformation. Which of the following best describes this transformation?
- ☐ A. Translation by $(7, 5)$ ☐ C. Rotation of 90°
☐ B. Reflection over the origin ☐ D. Reflection over the x -axis
- 5) A sector with central angle 120° has an area of 37.68 square centimeters. What is the radius of the circle? (Use sector area $= \frac{\text{angle}}{360^\circ} \times \pi r^2$ and $\pi \approx 3.14$.)
- ☐ A. 8 cm ☐ C. 6 cm
☐ B. 9 cm ☐ D. 12 cm





6)

Find the lateral surface area (curved side only) of the cylinder shown. Use $\pi \approx 3.14$.

☐ A. 39.25 m^2

☐ C. 125.6 m^2

☐ B. 62.8 m^2

☐ D. 188.4 m^2

7) Two dot plots show overlapping distributions of plant heights. A student concludes, "Population A is taller because some dots in A are higher than some dots in B." What is the error?

☐ A. The student ignored variability; a few high values don't indicate overall higher center

☐ C. Overlapping always means identical distributions

☐ B. Dot plots cannot show height comparisons

☐ D. The student is correct

8) A histogram displays the heights (in inches) of 40 seventh-graders. The intervals are 55–60, 60–65, 65–70, 70–75. The heights of the bars are 6, 14, 16, and 4. Which conclusion is valid?

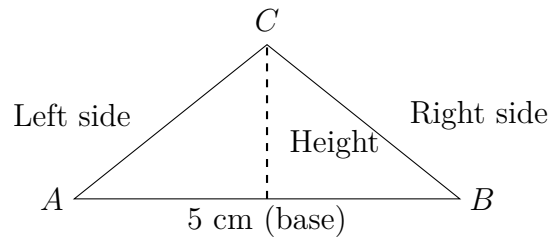
☐ A. Most students are taller than 75 inches

☐ C. 75% of students are between 65 and 70

☐ B. Most students are between 60 and 70 inches

☐ D. The average height is 65 inches


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1)

The triangle has a base of 5 cm and the two other sides are equal. What type of triangle is this?

☐ A. Equilateral

☐ C. Scalene

☐ B. Isosceles

☐ D. Right

2) A biased spinner has $P(\text{Win}) = 0.75$. If you spin once, what is $P(\text{Lose})$?

☐ A. 0.25

☐ C. 0.5

☐ B. 0.75

☐ D. -0.25

Service Fee Comparison

Bank A: \$5 monthly + \$0.50 per withdrawal

Bank B: \$8 monthly, unlimited withdrawals

3)

If a customer makes 10 withdrawals per month, which bank is cheaper?

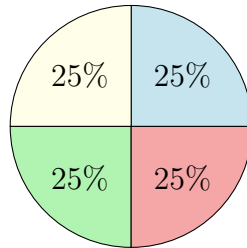
☐ A. Bank A

☐ C. They cost the same

☐ B. It depends on the withdrawal amount

☐ D. Bank B


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- 4) Housing Food Savings Entertainment

Marcus has a monthly budget of \$2 000 divided equally among four categories. How much is budgeted for food?

- ☐ A. \$400 ☐ C. \$600
☐ B. \$800 ☐ D. \$500
- 5) A shirt is on sale for \$18 after a 20% discount. What was the original price?
- ☐ A. \$14.40 ☐ C. \$22.50
☐ B. \$21.60 ☐ D. \$25
- 6) On a number line, which point represents a number whose absolute value is 10?



- ☐ A. Only 10 ☐ C. Both 10 and -10
☐ B. Only -10 ☐ D. Only 0



Connecticut Smarter Balanced 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 Connecticut Smarter Balanced practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.EE.4a) Equation: $5x - 5 = 45$. Add 5: $5x = 50$. Divide by 5: $x = 10$.
- 2) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|900-1000|}{1000} \times 100\% = \frac{100}{1000} \times 100\% = 10\%$.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute each: $7(t - 2) = 7t - 14$ and $3(4 - t) = 12 - 3t$. Combine like terms: $7t - 3t = 4t$ and $-14 + 12 = -2$, giving $4t - 2$.
- 4) **Choice B is correct.** (7.EE.4b) $x \leq 3$ means less than or equal to 3 (includes 3), so use a closed circle at the boundary 3 and an arrow pointing left toward smaller values.
- 5) **Choice D is correct.** (7.RP.3) $I = 15000 \times 0.07 \times 6 = \6300 .
- 6) **Choice C is correct.** (7.RP.1-7.RP.3) Scale 1 : 4 means the new dimensions are $\frac{1}{4}$ of the original: $24 \div 4 = 6$ inches; $36 \div 4 = 9$ inches.
- 7) **The correct answer is -17.** (7.NS.1-7.NS.3) The new balance is $-5 - 12 = -17$. You now owe 17 dollars.
- 8) **Choice D is correct.** (7.NS.1b) Subtract absolute values: $|14| - |-11| = 14 - 11 = 3$. Since $14 > |-11|$ and 14 is positive, the answer is 3.
- 9) **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.
- 10) **Choice A is correct.** (7.EE.1) Group like terms by variable: $(5x - 2x) + (3y + 4y) = (5 - 2)x + (3 + 4)y = 3x + 7y$.
- 11) **Choice C is correct.** (7.SP.5-7.SP.8) Die outcomes: 6 (rolling 1, 2, 3, 4, 5, 6). Coin outcomes: 2 (heads or tails). Total compound outcomes: $6 \times 2 = 12$ distinct pairs (e.g., H1, H2, H3, ..., H6, T1, T2, ..., T6).
- 12) **The correct answer is 1.5.** (7.RP.1-7.RP.3) The unit price is \$1.50 per apple, so the constant of proportionality is 1.5.
- 13) **Choice C is correct.** (7.RP.3) $\frac{15}{50} = \frac{3}{10} = 0.30 = 30\%$.
- 14) **Choice D is correct.** (7.RP.3) Markup = $0.60 \times 500 = \$300$. Selling price = $500 + 300 = \$800$.
- 15) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 10, 15, and 5 is 5. Factor: $10xy + 15y + 5 = 5(2xy + 3y + 1)$.
- 16) **Choice C is correct.** (7.G.4-7.G.6) $SA = 2(8 \cdot 5 + 8 \cdot 2 + 5 \cdot 2) = 2(40 + 16 + 10) = 2(66) = 132 \text{ m}^2$.
- 17) **Choice C is correct.** (7.RP.3) Since the total is 100% and green is 70%, the remaining red region is $100\% - 70\% = 30\%$. Check: $\frac{30}{100} = 30\%$.
- 18) **Choice A is correct.** (7.EE.1-7.EE.2) Substitute: $2(1) + 4(2) - 3(-1) = 2 + 8 + 3 = 13$.
- 19) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 8: $-3x = -6$. Divide by -3 : $x = 2$.
- 20) **Choice A is correct.** (7.EE.4b) "A number decreased by 10" is $n - 10$; "is less than or equal to 25" is ≤ 25 . (Note: D is a valid simplification but A is the direct translation.)
- 21) **Choice A is correct.** (7.G.1-7.G.5) A vertical plane through the apex creates a cross-section with two equal slant-height sides (both measured from apex to the base circle) and a base chord. Since the two slant sides are equal, the triangle is isosceles, regardless of where on the base circle the chord is positioned.
- 22) **The correct answer is A,B.** (7.SP.1-7.SP.4) Smartphones (45%) is the largest, so A is correct. Tablets (20%) plus smart watches (5%) make 25%, so B is correct. Laptops (30%) is not more than 50%, and smart watches (5%) are not more than 10%.
- 23) **Choice C is correct.** (7.G.1-7.G.5) Using the scale: $12 \text{ cm} \times 2 \text{ m/cm} = 24 \text{ m}$.
- 24) **Choice C is correct.** (7.G.4-7.G.6) $C = 2\pi r = 2 \times 3.14 \times 2 = 12.56 \text{ cm per rotation}$. Distance = $10 \times 12.56 = 125.6 \text{ cm}$.
- 25) **Choice C is correct.** (7.SP.1-7.SP.4) Random selection from a complete population list ensures every member has equal chance of selection, minimizing bias.
- 26) **Choice D is correct.** (7.RP.1-7.RP.3) The diagram shows 6 equal parts totaling 18 miles. The equation is $6m = 18$, giving $m = 3$ miles per part. This represents a proportional relationship where each part measures the same distance.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) The unit rate is the y -value when $x = 1$. Because (2, 30) is on the line through the origin, $k = 30/2 = 15$, so earning rate is \$15 per hour.
- 28) **Choice D is correct.** (7.RP.3) Remaining needed = $\$400 - \$100 = \$300$. Months = $\$300 \div \$30 = 10$ months.
- 29) **Choice B is correct.** (7.NS.1-7.NS.3) Distance from zero: $|-3| = 3$ and $|2| = 2$. Since $3 > 2$, -3 is further from zero.



A Note for a Careful Thinker

Hi, Careful Thinker!

◇ This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. This book gave you room to practice the kind of thinking seventh graders need: comparing quantities, analyzing patterns, and organizing information. ◇

★ **Remember this:** The goal was never just to finish pages. The goal was to become the kind of student who knows how to begin, how to adjust, and how to check. ★

Your Careful-Thinking Toolkit

- **Read Twice:** First for the story, second for the math.
- **Label Values:** Give each number a job.
- **Check Signs:** Negatives and inequalities deserve attention.
- **Use Evidence:** Let the work prove the answer.

Grade 7 test-day tip: On test day, underline the question before solving. It keeps your answer aimed at the right target.

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

Jay Daie

Your Math Practice 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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SUCCEED
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