

7 Connecticut Smarter Balanced Grade 7 Math Practice Tests



7 PRINTED TESTS + 2 ONLINE TESTS

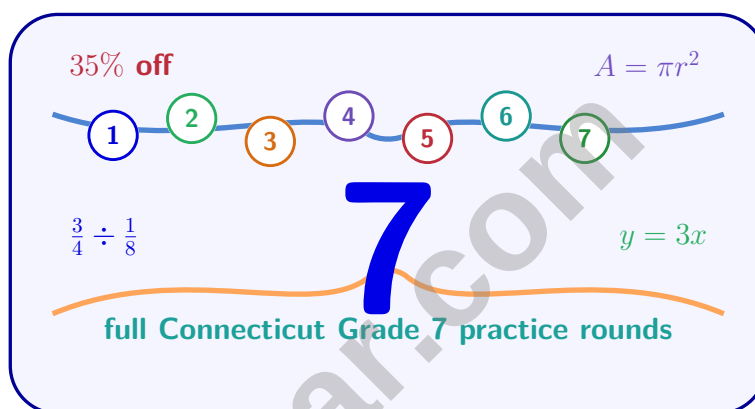


Standards Aligned Problem Solving
For Comprehensive Assessment Programs



8 Connecticut Smarter Balanced Grade 7 Math Practice Tests

Purposeful work on Connecticut Grade 7 percents, rational operations, equations, transformations, statistics, and probability



Eight 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!

Eight focused rounds for sharper Smarter Balanced math thinking

This book gives you seven 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

An eight-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?

Eight Smarter Balanced tests, 280 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 7–8	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
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) Two prisms have the same height of 10 cm. The first has a rectangular base 4 cm by 3 cm. The second has a triangular base with area 6 cm^2 . Which prism has a larger volume?

☐ A. The rectangular prism
☐ B. The triangular prism
☐ C. Both have the same volume
☐ D. Cannot be determined

- 2) Simplify: $2(5x - 2) - (3x - 4)$.

☐ A. $10x - 4 - 3x - 4 = 7x - 8$
☐ B. $10x - 4 - 3x + 4 = 7x$
☐ C. $7x + 2$
☐ D. $13x - 8$

- 3) A car travels at a constant speed passing through the origin and the point (2, 140) on a distance-time graph (where x = hours and y = miles). What is the unit rate in miles per hour?

- 4) A stock broker earns a 0.5% commission on all stock trades. A client makes a trade worth \$8,000. What is the broker's commission?

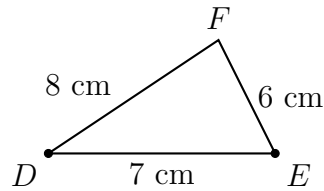
☐ A. \$4
☐ B. \$4,000
☐ C. \$400
☐ D. \$40

- 5) Complete the sign rule: When you multiply a negative number by a negative number, the product is _____.

☐ A. negative
☐ B. positive
☐ C. zero
☐ D. undefined



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6)

Triangle DEF has sides $DE = 7$ cm, $EF = 6$ cm, and $FD = 8$ cm. Is this triangle unique?

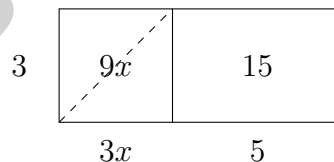
- ☐ A. No, infinitely many triangles have these side lengths ☐ C. No, SAS allows variation
☐ B. Yes, SSS guarantees uniqueness ☐ D. Yes, but only if we specify one angle

7) Which statement is true?

- ☐ A. $-5 + 3 = 8$ ☐ C. $4 + (-9) = 5$
☐ B. $-12 + 20 = -8$ ☐ D. $-5 + 3 = -2$

8) Simplify: $0.5x + 1.5x + 2y - y$

- ☐ A. $3.5xy$ ☐ C. $1.5x + y$
☐ B. $2x + y$ ☐ D. $3.5x + 2y$



9)

The area model above represents the factorization of $9x + 15$. What is the common factor shown as the height?

- ☐ A. 3 ☐ C. 9
☐ B. 5 ☐ D. 15



- 10) To simulate drawing a card from a standard deck and finding whether it is a heart (probability $\frac{1}{4}$), which spinner design is best?
- ☐ A. Spinner with 2 equal sections (one shaded, one not) ☐ C. Spinner with 6 equal sections (two shaded, four not)
- ☐ B. Spinner with 4 equal sections (one shaded, three not) ☐ D. Spinner with 13 equal sections (one shaded, twelve not)
- 11) A cube has surface area 600 cm^2 . What is its edge length?
- ☐ A. 5 cm ☐ C. 100 cm
- ☐ B. 10 cm ☐ D. 3600 cm
- 12) A teacher wants to estimate the average amount of time students in her class spend on homework. She surveys students who stayed after school for tutoring. Why is this sample biased?
- ☐ A. Students getting tutoring likely spend more time on homework ☐ C. The question is leading
- ☐ B. The sample is too small ☐ D. It is a convenience sample only
- 13) Evaluate $5 - 3(x - 2)$ when $x = 4$.
- ☐ A. -1 ☐ C. 5
- ☐ B. -5 ☐ D. 11
- 14) A laptop originally costs \$1200. It is discounted by 20%. What is the new price?



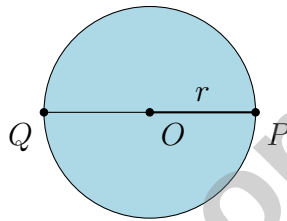
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- 1) Two box plots show salaries (in thousands of dollars) for two companies. Company P: Min 30, Q1 40, Median 50, Q3 65, Max 90; Company Q: Min 35, Q1 42, Median 48, Q3 60, Max 85. Which company has higher salaries overall?
- ☐ A. Company P (higher median and Q3) ☐ C. Both companies pay equally
☐ B. Company Q (higher minimum) ☐ D. Company Q (higher maximum)
- 2) A bar graph shows: Salaries \$6M, Programs \$2M, Facilities \$1.5M, Admin \$0.5M. The bars extend to heights 6, 2, 1.5, and 0.5 respectively. However, the y-axis has no label indicating units. What makes this graph misleading?
- ☐ A. The y-axis label is missing, so readers cannot confirm the unit (millions versus thousands) ☐ B. The bars are not drawn to scale
☐ C. The title is unclear ☐ D. The colors are too similar
- 3) A data set has values: 12, 15, 15, 18, 21, 23, 24, 28. Which is the correct stem-and-leaf plot?
- ☐ A. Stem 1: 2, 5, 5, 8; Stem 2: 1, 3, 4, 8 ☐ C. Stem 1: 2, 5, 5, 8; Stem 2: 3, 4, 8, 1
☐ B. Stem 1: 1, 2, 5, 5; Stem 2: 1, 3, 4, 8 ☐ D. Stem 1: 1, 2, 3, 4; Stem 2: 1, 5, 5, 8
- 4) A jewelry box lid has a square face (8 cm $\times$ 8 cm) with a semicircular handle attached to the top (diameter 8 cm). Using $\pi \approx 3.14$, what is the total area?
- ☐ A. 64 cm² ☐ C. 100.48 cm²
☐ B. 89.12 cm² ☐ D. 127.04 cm²



- 5) Compute $2\frac{1}{3} \div \frac{5}{9}$. Show all steps: convert mixed number, apply reciprocal rule, and simplify.

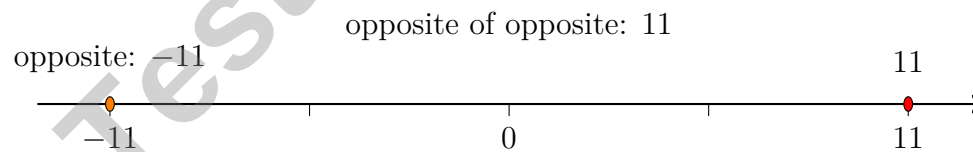
- 6) The diagram below shows a circle with center O .



Which line segment is the radius of the circle?

- ☐ A. OP ☐ C. PQ
☐ B. OQ ☐ D. QP

- 7) What is the opposite of the opposite of 11?



- ☐ A. -11 ☐ C. 0
☐ B. 22 ☐ D. 11



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1) Convert $\frac{13}{20}$ to a decimal.

☐ A. 0.13

☐ C. 0.65

☐ B. 0.23

☐ D. 0.85

2) What negative common factor is factored out of $-8x - 16$?

3) A proportional relationship has the equation $y = kx$. If the point $(9, 12)$ lies on the line, what is the value of k ?

☐ A. $k = \frac{3}{4}$

☐ C. $k = 3$

☐ B. $k = \frac{9}{12}$

☐ D. $k = \frac{4}{3}$

4) A sports league charges a \$100 registration fee and \$50 per game played. If a team's total bill is \$400, write an equation to represent the number of games g played, solve for g , and verify your answer.

5) Solve: $\frac{x}{4} - 2 = 3$

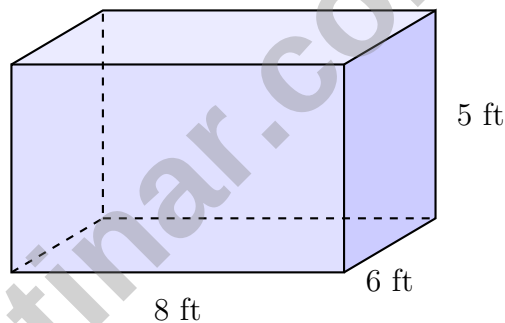


6) A credit report shows your payment history, credit balances, and account types. Which best describes why maintaining good credit is important?

- ☐ A. It guarantees you will never have debt
- ☐ B. It prevents you from spending money at lower interest rates
- ☐ C. It eliminates the need for a job
- ☐ D. It may help you qualify for loans

7) A gardener increased the area of a flowerbed from 40 square feet to 56 square feet. What is the percent increase?

- ☐ A. 16%
- ☐ B. 28.6%
- ☐ C. 40%
- ☐ D. 60%



8)

A rectangular prism has dimensions $8\text{ ft} \times 5\text{ ft} \times 6\text{ ft}$. Find the total surface area.

- ☐ A. 120 ft^2
- ☐ B. 236 ft^2
- ☐ C. 240 ft^2
- ☐ D. 480 ft^2



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Smarter Balanced Assessment Consortium 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 Smarter Balanced Assessment Consortium practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.G.4-7.G.6) Rectangular: $V = 4 \times 3 \times 10 = 120 \text{ cm}^3$. Triangular: $V = 6 \times 10 = 60 \text{ cm}^3$. The rectangular prism is larger.
- 2) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute the 2 and distribute the negative: $10x - 4 - (3x - 4) = 10x - 4 - 3x + 4$. Combine like terms: $(10x - 3x) + (-4 + 4) = 7x + 0 = 7x$. The simplified form shows that the constants cancel, leaving only $7x$.
- 3) **The correct answer is 70.** (7.RP.1-7.RP.3) The unit rate is $140 \div 2 = 70$ miles per hour. This is the car's constant speed.
- 4) **Choice D is correct.** (7.RP.3) Commission = commission rate $\times$ trade value = $0.005 \times 8000 = \$40$.
- 5) **Choice B is correct.** (7.NS.2) Negative times negative always yields a positive product.
- 6) **Choice B is correct.** (7.G.1-7.G.5) When all three side lengths are specified (7 cm, 6 cm, 8 cm), exactly one unique triangle (up to congruence) can be constructed. This is the SSS (Side-Side-Side) condition.
- 7) **Choice D is correct.** (7.NS.1b) Check each: A: $-5 + 3 = -2$, not 8. B: $-5 + 3 = -2$ ✓. C: $4 + (-9) = -5$, not 5. D: $-12 + 20 = 8$, not -8 .
- 8) **Choice B is correct.** (7.EE.1) Combine x terms: $(0.5 + 1.5)x = 2x$. Combine y terms: $(2 - 1)y = y$. Result: $2x + y$.
- 9) **Choice A is correct.** (7.EE.1-7.EE.2) The rectangle has length $3x + 5$ and area $9x + 15$. Height must be 3, which is the GCF.
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) Probability $\frac{1}{4}$ means 1 favorable outcome out of 4 equally likely ones.
- 11) **Choice B is correct.** (7.G.4-7.G.6) $6s^2 = 600 \Rightarrow s^2 = 100 \Rightarrow s = 10 \text{ cm}$.
- 12) **Choice A is correct.** (7.SP.1-7.SP.4) Tutoring students are not representative of all students; they typically struggle with the material and may spend more time on homework, making the average unrepresentative of the whole class.
- 13) **Choice A is correct.** (7.EE.1-7.EE.2) Substitute: $5 - 3(4 - 2) = 5 - 3(2) = 5 - 6 = -1$.
- 14) **The correct answer is \$960.** (7.RP.3) Discount: $\frac{20}{100} \times 1200 = 240$. New price: $1200 - 240 = \$960$.
- 15) **Choice C is correct.** (7.EE.3-7.EE.4) Add 2: $\frac{x}{3} = 6$. Multiply by 3: $x = 18$.
- 16) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 8: $2x = 16$. Divide by 2: $x = 8$.
- 17) **Choice C is correct.** (7.EE.4b) $x \leq 2$ includes 2 (filled circle) and all values less than 2 (arrow left).
- 18) **The correct answer is \$129.71.** (7.RP.3) Apply the 15% discount to get $140(0.85) = 119$. Then add 9% tax: $119(1.09) = 129.71$.
- 19) **Choice A is correct.** (7.G.1-7.G.5) Using similar cones: $\frac{r}{8} = \frac{10}{12}$, so $r = 8 \times \frac{10}{12} = \frac{80}{12} = \frac{20}{3} \text{ cm}$.
- 20) **Choice A is correct.** (7.G.1-7.G.5) Vertical angles are congruent: $a = 44^\circ$.
- 21) **The correct answer is A,C.** (7.RP.3) Choice A: $50\% = \frac{1}{2}$. Choice B: $75\% = \frac{3}{4}$, not $\frac{2}{3}$. Choice C: $\frac{3}{4} = 0.75 = 75\%$. Choice D is false because $\frac{1}{5} = 20\%$, not 25% .
- 22) **Choice C is correct.** (7.G.1-7.G.5) Scale factor = $\frac{12}{8} = 1.5$.
- 23) **Choice A is correct.** (7.G.4-7.G.6) $C = \pi d = 3.14 \times 12 = 37.68 \text{ cm}$.
- 24) **Choice B is correct.** (7.G.4-7.G.6) $\frac{90^\circ}{360^\circ} \times 3.14 \times 4^2 = \frac{1}{4} \times 50.24 = 12.56 \text{ cm}^2$.
- 25) **Choice B is correct.** (7.G.4-7.G.6) $471 = 3.14 \times 25 \times h \Rightarrow h = \frac{471}{78.5} = 6 \text{ feet}$.
- 26) **Choice C is correct.** (7.SP.5-7.SP.8) Star or heart = $9 + 7 = 16$. $P(\text{star or heart}) = \frac{16}{24} = \frac{2}{3}$.
- 27) **Choice C is correct.** (7.NS.1-7.NS.3) Evaluate: A: $\frac{2}{4} - \frac{3}{4} = -\frac{1}{4} = -0.25$; B: $-\frac{2}{8} + \frac{1}{8} = -\frac{1}{8} = -0.125$; C: $\frac{3}{8} - \frac{8}{8} = -\frac{5}{8} = -0.625$; D: $-0.5 = -0.5$. The smallest is C at -0.625 .
- 28) **Choice A is correct.** (7.NS.1-7.NS.3) $x = 9 \times \frac{2}{3} = 6$.
- 29) **Choice A is correct.** (7.NS.2d) Divide $1 \div 16 = 0.0625$. Since $16 = 2^4$, this is a terminating decimal.
- 30) **The correct answer is -3 .** (7.NS.1-7.NS.3) The opposite of -3 is 3, and the opposite of 3 is -3 .



You Are Building Test Stamina

Hi, Stamina Builder!

◇ This broad and demanding book gave you seven strong Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 7 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

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Practice Today. Succeed Tomorrow!

This book includes **7** 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.

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Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

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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.

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- ✓ 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!

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