

4

South Dakota

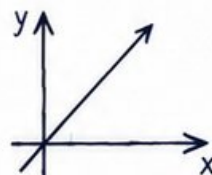
Smarter Balanced

GRADE
7
MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs

$$y = mx + b$$



$$\frac{2x}{3} + \frac{x}{6} = 2$$



$$V = \frac{1}{3} \pi r^2 h$$



4 PRINTED TESTS



2 ONLINE TESTS



USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



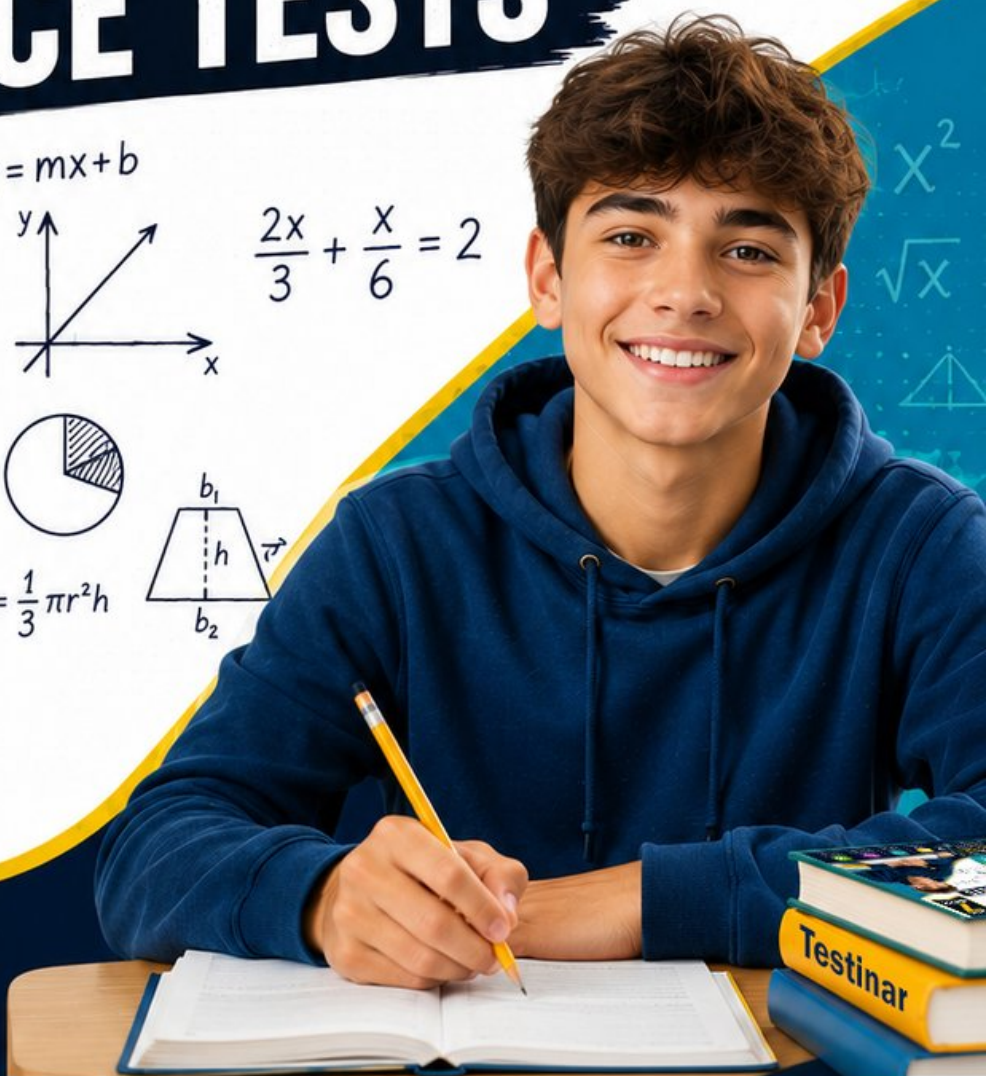
Strengthen
Math Skills



Detailed Answers
& Explanations

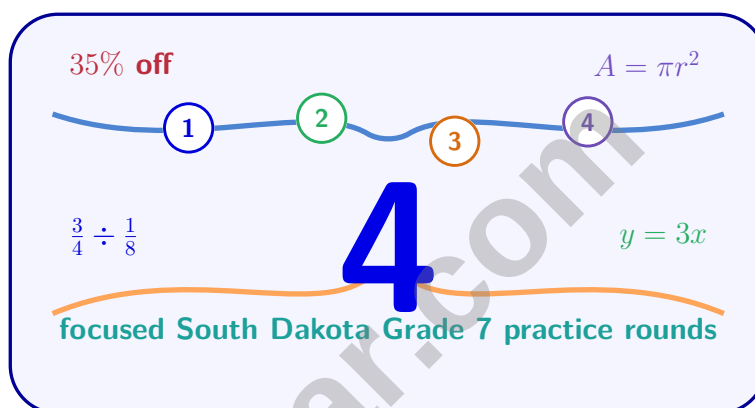


Improve Test
Performance



4 South Dakota Smarter Balanced Grade 7 Math Practice Tests

Grade 7 Smarter Balanced Review with Four Focused Practice Tests



Four 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, South Dakota Grade 7 Problem Solver!

Four focused rounds for sharper Smarter Balanced math thinking

This book gives you four 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 South Dakota 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 four-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.

South Dakota 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?

Four Smarter Balanced tests, 160 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.
Tests 3–4	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) Compare two estimates for the same actual value of 80 units. Estimate 1 is 72 units; Estimate 2 is 88 units. Which has less percent error?

☐ A. Estimate 1
☐ B. Estimate 2
☐ C. Equal percent error
☐ D. Estimate 1 is double

- 2) A circular pool has a radius of 9 feet. What is the area of the pool's surface? Use $\pi \approx 3.14$.

☐ A. 56.52 ft²
☐ B. 113.04 ft²
☐ C. 254.34 ft²
☐ D. 1017.36 ft²

- 3) A researcher collects data on the relationship between hours of sleep and performance on a math test for 20 students. Some data points show students who slept 7 hours and scored 60, while others slept 7 hours and scored 95. What does this variation BEST indicate?

☐ A. Sleep has no effect on test performance
☐ B. Sleep alone does not determine test scores; other factors matter
☐ C. The data is incorrect because the same sleep results in different scores
☐ D. Students who sleep 7 hours have inconsistent abilities

- 4) A six-sided die shows the numbers 1, 1, 2, 3, 3, 3 on its faces. What is the probability of rolling a 1?

☐ A. $\frac{1}{6}$
☐ B. $\frac{2}{5}$
☐ C. $\frac{2}{6}$
☐ D. $\frac{1}{2}$



- 5) A color (Red or Blue) and a size (Small, Medium, Large) are chosen for a T-shirt. How many different T-shirt combinations are possible?

☐ A. 3☐ C. 6☐ B. 5☐ D. 8

- 6) A number cube is rolled and a coin is flipped. What is $P(\text{rolling a 4 and flipping tails})$?

☐ A. $\frac{1}{12}$ ☐ C. $\frac{1}{6}$ ☐ B. $\frac{1}{8}$ ☐ D. $\frac{7}{12}$

- 7) A histogram shows the price ranges for two car models. Model S: prices concentrated around \$25,000. Model T: prices spread from \$18,000 to \$32,000 with peak at \$24,000. Which model is easier to budget for?

☐ A. Model S (consistent pricing around \$25,000)☐ C. Both models have identical pricing☐ B. Model T (wider range means more options)☐ D. Model T (cheaper at lower end)

- 8) On a number line, if the point -12 is 12 units from zero, how many units from zero is the point 12?



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- 9) A researcher flipped three coins 160 times and recorded how many came up heads each time:

Heads Count	0	1	2	3
Frequency	22	56	62	20

What is the experimental probability of getting exactly 2 heads?

- ☐ A. $\frac{2}{3}$ ☐ C. 0.31
☐ B. $\frac{62}{160}$ ☐ D. 0.39
- 10) The temperature is 5°C and drops 1.2 degrees per hour for 5 hours. What is the final temperature?

- 11) Between which two consecutive integers does $\sqrt{40}$ lie? (Write your answer in the form “between a and b ”)



1) A juice stand sells drinks at a proportional rate. When 5 drinks are sold, the revenue is \$30. Write the equation for revenue r in terms of drinks d .

☐ A. $r = 5d$

☐ B. $r = \frac{d}{6}$

☐ C. $r = 30d$

☐ D. $r = 6d$

2) What is $\sqrt{144}$?

☐ A. 10

☐ B. 11

☐ C. 12

☐ D. 14

3) Simplify: $5(2a + 3) - (a + 6)$.

☐ A. $10a + 15 - a - 6 = 9a + 9$

☐ B. $10a + 9$

☐ C. $11a - 6$

☐ D. $10a + 3$

4) A student simplifies $-2(3 + 4)$ and writes: $-2(3) + 2(4) = -6 + 8 = 2$. What is the correct answer?

☐ A. -14

☐ B. -2

☐ C. 2

☐ D. 14

5) Add: $-12 + 7 + (-5)$. Show your work.



6) A rectangular garden is 10 meters long and 5 meters wide. If you double all the dimensions, what is the new area?

☐ A. 100 m^2

☐ C. 200 m^2

☐ B. 150 m^2

☐ D. 400 m^2

7) A stock loses 15 points. Express this as a signed number.

☐ A. -15 (correct; loss is negative)

☐ C. 15 (ignores the loss/negative direction)

☐ B. 0 (no change)

☐ D. -30 (double the loss)

8) Simplify: $\frac{2}{3}m + \frac{1}{6}m$

☐ A. $\frac{3}{9}m$

☐ C. $\frac{1}{2}m$

☐ B. $\frac{5}{6}m$

☐ D. $\frac{3}{6}m$

9) A spinner has 6 equal sections. To simulate rolling a standard die once, how many trials are needed if we spin once per trial?

☐ A. 1 trial

☐ C. 6 trials

☐ B. 2 trials

☐ D. 36 trials

h_1	$8x$	12
h_2	16	24

w_1

w_2

10)

An area model has four rectangular sections with areas $8x$, 12 , 16 , and 24 . What is the GCF of all four terms?

☐ A. 2

☐ C. 8

☐ B. 4

☐ D. 12



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- 1) A farmer has a field with area $24ab + 36b$ square meters. Which factorization represents the dimensions?

☐ A. $12b(2a + 3)$

☐ C. $24(ab + 1.5b)$

☐ B. $6b(4a + 6)$

☐ D. $4(6ab + 9b)$

- 2) A histogram displays the number of plants in gardens across two neighborhoods. North Side: concentrated at 15–25 plants. South Side: concentrated at 25–35 plants. Both neighborhoods show similar spread. What inference can be made?

☐ A. South Side gardens have approximately 10 more plants on average

☐ C. Both neighborhoods have identical gardens

☐ B. North Side is better for gardening

☐ D. Gardening is equally popular in both areas

- 3) A scale drawing uses a scale of 1 inch = 50 feet. If a building is represented by 2.75 inches on the drawing, what is the actual height of the building?



- 4) Three-digit data in a stem-and-leaf plot with stem 14 and leaves 2, 5, 8 represents which values?

☐ A. 142, 145, 148

☐ C. 14.2, 14.5, 14.8

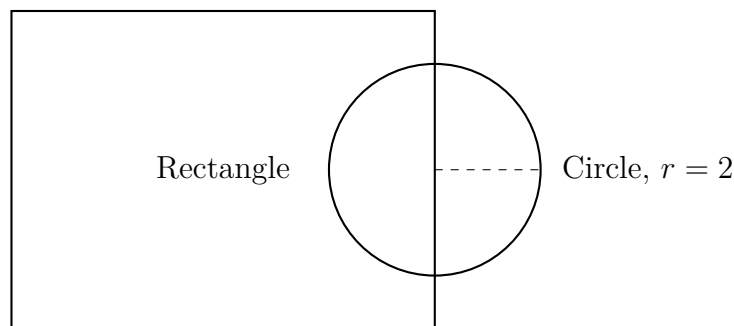
☐ B. 1402, 1405, 1408

☐ D. 214, 514, 814



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5)



A composite figure has a rectangle ($8 \text{ m} \times 6 \text{ m}$) with a circle (radius 2 m) attached to one side. Using $\pi \approx 3.14$, what is the total area?

☐ A. 12.56 m^2

☐ C. 60.56 m^2

☐ B. 48 m^2

☐ D. 98.24 m^2

6) A rectangular prism has length 15 cm and width 6 cm . If the height is tripled from 2 cm to 6 cm , how much does the volume increase?

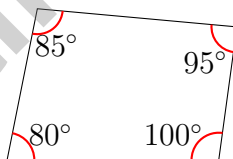
☐ A. 180 cm^3

☐ C. 540 cm^3

☐ B. 360 cm^3

☐ D. 720 cm^3

7)



Which statement is true about the angle measures shown?

☐ A. Their sum is 180° .

☐ C. They are all equal.

☐ B. Their sum is 360° .

☐ D. They cannot make a quadrilateral.



South Dakota 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 South Dakota 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.RP.3) Estimate 1: $\frac{|72-80|}{80} \times 100\% = 10\%$. Estimate 2: $\frac{|88-80|}{80} \times 100\% = 10\%$. Both estimates are equally far from the actual value (8 units away).
- 2) **Choice C is correct.** (7.G.4-7.G.6) $A = \pi r^2 = 3.14 \times 9^2 = 3.14 \times 81 = 254.34 \text{ ft}^2$.
- 3) **Choice B is correct.** (7.SP.1-7.SP.4) A scatter plot reveals association, not causation. Variation in scores at the same sleep duration indicates that other variables (studying, prior knowledge, test anxiety) also influence performance.
- 4) **Choice C is correct.** (7.SP.5-7.SP.8) Faces showing 1: 2 out of 6. $P(\text{rolling } 1) = \frac{2}{6} = \frac{1}{3}$.
- 5) **Choice C is correct.** (7.SP.5-7.SP.8) Colors: 2; sizes: 3. By the counting principle: $2 \times 3 = 6$ combinations.
- 6) **Choice A is correct.** (7.SP.5-7.SP.8) $P(4 \text{ and tails}) = \frac{1}{6} \cdot \frac{1}{2} = \frac{1}{12}$.
- 7) **Choice A is correct.** (7.SP.3) Budgeting requires predictability. Model S's tight clustering at \$25,000 makes budgeting straightforward. Model T's spread (\$18,000–\$32,000) means prices are less predictable, complicating budget planning.
- 8) **The correct answer is 12.** (7.NS.1-7.NS.3) Both -12 and 12 are the same distance from zero, which is 12 units. They are opposites.
- 9) **Choice B is correct.** (7.SP.6) Getting exactly 2 heads occurred 62 times in 160 trials. Experimental probability $= \frac{62}{160} = 0.3875 \approx 0.39$.
- 10) **The correct answer is -1 .** (7.NS.2) Total change: $(-1.2) \times 5 = -6$ degrees. Final temperature: $5 + (-6) = -1^\circ\text{C}$.
- 11) **The correct answer is (6, 7).** (7.NS.1-7.NS.3) $6^2 = 36$ and $7^2 = 49$. Since $36 < 40 < 49$, the answer is between 6 and 7.
- 12) **Choice C is correct.** (7.SP.1-7.SP.4) Values in range: 305, 308, 311 (from stems 30 and 31, leaves 5, 8, 1). That's 3 values.
- 13) **Choice B is correct.** (7.G.4-7.G.6) Rectangle: $6 \times 4 = 24 \text{ m}^2$. Triangle: $\frac{1}{2} \times 6 \times 3 = 9 \text{ m}^2$. Total: $24 + 9 = 33 \text{ m}^2$. The student forgot to use the triangle area formula $\frac{1}{2} \times b \times h$.
- 14) **Choice C is correct.** (7.G.4-7.G.6) Volume of a prism = base area $\times$ height $= 15 \times 10 = 150 \text{ cm}^3$.
- 15) **Choice D is correct.** (7.G.1-7.G.5) With only angles known ($32^\circ, 58^\circ, 90^\circ$), the shape is determined but not the size. Any scale of this triangle satisfies the angle conditions.
- 16) **Choice A is correct.** (7.G.4-7.G.6) $r = \frac{d}{2} = \frac{13.4}{2} = 6.7 \text{ mm}$.
- 17) **Choice B is correct.** (7.G.1-7.G.5) We know two angles (40° and 65° , so the third is 75°) and one side ($HI = 8 \text{ cm}$) between two known angles. This is AAS (Angle–Angle–Side), which uniquely determines the triangle.
- 18) **Choice B is correct.** (7.SP.5-7.SP.8) $60\% = \frac{60}{100} = 0.6$.
- 19) **Choice C is correct.** (7.SP.1-7.SP.4) $\frac{16}{100} = \frac{x}{8000}$. So $x = 0.16 \times 8000 = 1280$.
- 20) **Choice D is correct.** (7.RP.3) 30% of 150 is $0.30 \times 150 = 45$.
- 21) **The correct answer is B, C.** (7.RP.1-7.RP.3) Option B: cost $= 1.50 \times$ pounds (proportional, of form $y = kx$). Option C: distance $=$ speed $\times$ time (proportional). Option A is a general trend but not a strict proportional relationship. Option D: height does not scale proportionally with age (growth rates vary).
- 22) **Choice A is correct.** (7.NS.1-7.NS.3) When subtracting from a negative number, move further left on the number line: $-5 - 3 = -8$.
- 23) **Choice B is correct.** (7.SP.1-7.SP.4) 36% of \$50,000 $= 0.36 \times 50,000 = \$18,000$.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply doll height by scale: 2 feet $\times 12 = 24$ feet.
- 25) **Choice D is correct.** (7.RP.1-7.RP.3) Proportional relationship: cost equals constant times pounds. Form is $y = kx$, so $c = 2.5p$.
- 26) **Choice D is correct.** (7.RP.1-7.RP.3) Each worker: $\frac{2/3}{3} = \frac{2}{3} \times \frac{1}{3} = \frac{2}{9}$ of the project.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) $y = \frac{3}{5}(25) = \frac{75}{5} = 15$.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point is (1, 0.6), indicating \$0.60 per gallon.



Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 4 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **4** 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:

4 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.



Improve Understanding

Learn with clear explanations and step-by-step solutions.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost 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.



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