

10

South Dakota

Smarter Balanced

GRADE

7

MATH

PRACTICE TESTS

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



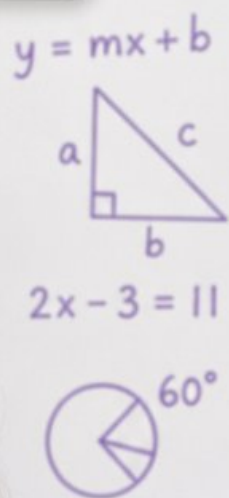
DETAILED ANSWER EXPLANATIONS

Learn with step-by-step
solutions



FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice



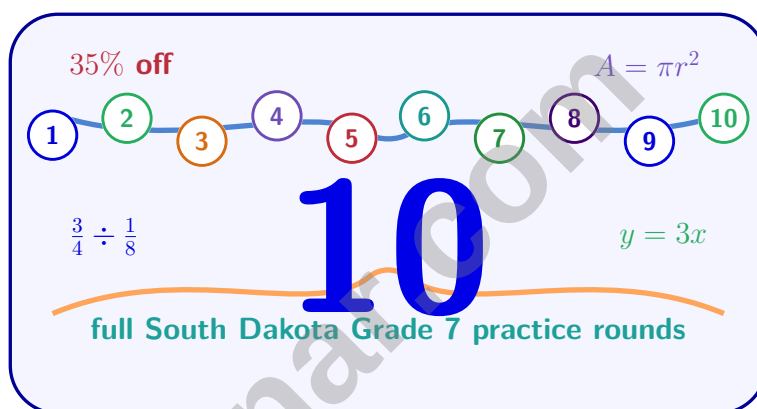
10 PRINTED TESTS
+2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 South Dakota Smarter Balanced Grade 7 Math Practice Tests

South Dakota Grade 7 Smarter Balanced Practice for landmark-clear practice in ratios, percent change, expressions, geometry, statistics, and probability



Ten 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!

Ten focused rounds for sharper South Dakota Smarter Balanced math thinking

This book gives you ten 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 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.

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?

Ten South Dakota Smarter Balanced 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 South Dakota 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.



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& answers

Table of Contents

★ Practice Test 1	_____	11
★ Practice Test 2	_____	25
★ Practice Test 3	_____	41
★ Practice Test 4	_____	55
★ Practice Test 5	_____	70
★ Practice Test 6	_____	85
★ Practice Test 7	_____	99
★ Practice Test 8	_____	114
★ Practice Test 9	_____	128
★ Practice Test 10	_____	141
Practice Test Answer Keys	_____	155
Practice Test Answers and Explanations	_____	161

1) A temperature drops from $5^{\circ}F$ to $-8^{\circ}F$. What is the temperature change (final minus initial)?

☐ A. $-13^{\circ}F$

☐ C. $3^{\circ}F$

☐ B. $-3^{\circ}F$

☐ D. $13^{\circ}F$

2) A school gymnasium is drawn at 9 cm by 15 cm on a blueprint with scale 1 cm : 4 m. The drawing is redone at scale 1 cm : 2 m. How many centimeters long is the gym on the new blueprint?

☐ A. 7.5 cm

☐ C. 30 cm

☐ B. 15 cm

☐ D. 60 cm

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

4) Which scenario shows the most total interest earned over 3 years with compound interest?

☐ A. \$2,000 at 4%

☐ C. \$2,500 at 3%

☐ B. \$1,000 at 8%

☐ D. \$1,500 at 6%



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- 5) A manufacturing plant tracks defect rates for two product lines over 10 batches:

Line	Mean Defect Rate	IQR
Product X	2.5%	1.0%
Product Y	2.3%	2.5%

Which product line is better for consistent quality control?

- ☐ A. Product X (slightly higher defect rate is offset by consistency)
 ☐ B. Product Y (lower mean defect rate)
 ☐ C. Both are identical
 ☐ D. Cannot determine without knowing minimum defect rates
- 6) A coin is flipped and a six-sided die is rolled. How many outcomes are in the sample space?
- ☐ A. 6
 ☐ B. 8
 ☐ C. 12
 ☐ D. 36
- 7) A jar contains 10 marbles: 3 red, 2 blue, and 5 green. What is the probability of drawing a marble that is not blue?
- ☐ A. $\frac{3}{10}$
☐ B. $\frac{4}{5}$
☐ C. $\frac{1}{5}$
☐ D. $\frac{3}{5}$
- 8) A dot plot shows customer wait times (in minutes) at two restaurants. Restaurant X: 3, 4, 4, 5, 5, 5, 6, 6, 7 (minutes); Restaurant Y: 2, 5, 8, 10, 12, 15 (minutes). Which restaurant has more predictable wait times?
- ☐ A. Restaurant X (clustered around 5 minutes)
 ☐ B. Restaurant Y (varies from 2 to 15 minutes)
 ☐ C. Both restaurants have equally predictable times
 ☐ D. Restaurant Y is always faster



- 9) A spinner is divided into 8 equal sections numbered 1 through 8. What is the probability of spinning an odd number OR a prime number?
- ☐ A. $\frac{4}{8}$ (only odd) ☐ C. $\frac{7}{8}$
☐ B. $\frac{6}{8}$ (missing overlap) ☐ D. $\frac{8}{8}$ (all outcomes)
- 10) A factory tests light bulbs for quality. Out of 1000 bulbs tested, 980 passed inspection. Based on this experimental data, how many bulbs out of 5000 would be expected to pass?
- ☐ A. 980 ☐ C. 4800
☐ B. 3900 ☐ D. 4900
- 11) The stem-and-leaf plot below shows test scores.

Stem	Leaves
4	2, 6, 8
5	1, 3, 7, 9
6	0, 5, 5, 8
7	2, 4, 6

What is the maximum score?

- ☐ A. 76 ☐ C. 79
☐ B. 77 ☐ D. 86
- 12) **Two Estimates: Which is Better?**
 Estimate X: 55 vs. Actual 60 Estimate Y: 62 vs. Actual 60
- ☐ A. Estimate X is better ☐ C. Both equally good
☐ B. Cannot compare ☐ D. Estimate Y is better



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- 1) A babysitter charges hourly. The table shows total earnings for different hours worked.

Hours	Earnings (\$)
2	18
4	36
7	63

What is the hourly rate (constant of proportionality)?

- ☐ A. \$12 per hour ☐ C. \$8 per hour
☐ B. \$10 per hour ☐ D. \$9 per hour
- 2) A construction worker needs to find the area of a lot shaped like a rectangle (16 yd $\times$ 12 yd) minus a triangular section (12 yd base, 4 yd height) cut from one corner. What is the usable area?

- ☐ A. 168 yd² ☐ C. 192 yd²
☐ B. 176 yd² ☐ D. 216 yd²
- 3) Convert 5,000 cubic inches to cubic feet. (Hint: 1 ft = 12 in, so 1 ft³ = 1,728 in³)
- ☐ A. 2.89 ft³ ☐ C. 3.68 ft³
☐ B. 3.25 ft³ ☐ D. 8,640 ft³
- 4) Expand: $-3(x - 6)$

- ☐ A. $-3x - 18$ ☐ C. $3x - 18$
☐ B. $-3x + 18$ ☐ D. $3x + 18$



- 5) Simplify: $9x^2 + 3x^2 + 2x - 4x$
- ☐ A. $12x^2 - 2x$ ☐ C. $11x^2 - x$
☐ B. $12x^3 - 2x$ ☐ D. $12x^2 + 2x$
- 6) Which shows $20y + 24$ factored completely?
- ☐ A. $4(5y + 6)$ ☐ C. $8(2.5y + 3)$
☐ B. $2(10y + 12)$ ☐ D. $6(3.33y + 4)$
- 7) A cube has surface area 150 cm^2 . What is the edge length of the cube?
- ☐ A. 5 cm ☐ C. 25 cm
☐ B. 6 cm ☐ D. 30 cm
- 8) A percent can be converted to an angle in a circle graph. What angle corresponds to 25% of a circle?
- ☐ A. 45° ☐ C. 90°
☐ B. 60° ☐ D. 120°
- 9) Solve: $2(x - 3) \leq 10$
- ☐ A. $x \leq 3$ ☐ C. $x \leq 13$
☐ B. $x \leq 8$ ☐ D. $x < 8$
- 10) A manufacturing plant produces widgets at a constant rate. In 8 hours, 240 widgets are produced. How many widgets are produced per hour?
- ☐ A. 20 widgets per hour ☐ C. 240 widgets per hour
☐ B. 1920 widgets per hour ☐ D. 30 widgets per hour



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- 1) Alex says, “The probability of rolling a 7 on a standard die is 0.1 (unlikely).” What is wrong with Alex’s statement?
- ☐ A. Rolling a 7 is impossible, not unlikely; the probability is 0
- ☐ B. Probability cannot be expressed as a decimal
- ☐ C. Alex should have said the probability is 0.5
- ☐ D. There is nothing wrong; 0.1 is correct
- 2) A hospital tracks patient visit types. If emergency visits occupy 216° of a circle graph, what percent do they represent?
- ☐ A. 36%
- ☐ B. 54%
- ☐ C. 60%
- ☐ D. 72%
- 3) Simplify: $(4x - 3) - (2x + 5)$
- ☐ A. $2x - 8$
- ☐ B. $2x + 2$
- ☐ C. $6x - 8$
- ☐ D. $2x + 8$
- 4) Simplify: $2^4 \cdot 2^2$
- ☐ A. 2^2
- ☐ B. 2^6
- ☐ C. 2^8
- ☐ D. 4^4
- 5) A student is writing an equation for a word problem. The problem states: “A book club charges a \$10 membership and \$3 per book borrowed.” The student writes $3 + 10b = \text{total}$. What is the error?
- ☐ A. The constant 10 should be multiplied by b .
- ☐ B. The coefficient 3 should be the constant term.
- ☐ C. The variable b should be a different letter.
- ☐ D. There is no error; the equation is correct.



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6) Solve: $6x - 8 = 28$

☐ A. $x = 4$

☐ C. $x = 6$

☐ B. $x = 5$

☐ D. $x = 8$

7) Solve for x : $3(x - 7) = 18$

☐ A. $x = 7$

☐ C. $x = 11$

☐ B. $x = 9$

☐ D. $x = 13$

8) A savings account has a balance of $-\$15$ (overdraft). After depositing $\$50$, what is the new balance? Write and solve an equation.

☐ A. $\$25$

☐ C. $\$50$

☐ B. $\$35$

☐ D. $\$65$

9) 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.

☐ C. The drawing and the object are the same size.

☐ B. The drawing is larger than the actual object.

☐ D. Cannot be determined without more information.

10) A rectangular building is shown on a site plan as 7 inches by 11 inches at a scale of 1 in : 20 ft. Which statement correctly describes the actual building?

☐ A. The length is 140 ft and width is 220 ft

☐ C. The length is 35 ft and width is 55 ft

☐ B. The length is 220 ft and width is 140 ft

☐ D. The length is 55 ft and width is 35 ft



**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 A is correct.** (7.NS.1-7.NS.3) The change is final minus initial: $-8 - 5 = -13^\circ F$. The negative sign indicates the temperature decreased by 13 degrees.
- 2) **Choice C is correct.** (7.G.1-7.G.5) Halving the real scale (4 m to 2 m) doubles the drawing: $15 \times 2 = 30$ cm.
- 3) **The correct answer is 16.** (7.G.4-7.G.6) The longest chord is the diameter: $d = 2r = 2 \times 8 = 16$ inches.
- 4) **Choice D is correct.** (7.RP.3) A: $2000(1.04)^3 = 2249.73$; interest = 249.73. B: $1500(1.06)^3 = 1785.41$; interest = 285.41. C: $2500(1.03)^3 = 2732.10$; interest = 232.10. D: $1000(1.08)^3 = 1259.71$; interest = 259.71. B earns the most.
- 5) **Choice A is correct.** (7.SP.1-7.SP.4) Product X: mean 2.5%, IQR 1.0% (tight middle spread, consistent control). Product Y: mean 2.3%, IQR 2.5% (wider spread, less predictable). For quality control, consistency (smaller IQR) matters more than a 0.2% mean advantage.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) The coin has 2 outcomes and the die has 6. By the counting principle: $2 \times 6 = 12$ total outcomes.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) Non-blue marbles = $3 + 5 = 8$. $P(\text{not blue}) = \frac{8}{10} = \frac{4}{5}$.
- 8) **Choice A is correct.** (7.SP.3) Restaurant X has most data points near 5 minutes with range 4 (from 3 to 7). Restaurant Y's range is 13 (from 2 to 15) with data spread across the range, making it less predictable.
- 9) **Choice C is correct.** (7.SP.5-7.SP.8) Odd: 1, 3, 5, 7; Prime: 2, 3, 5, 7. Union: 1, 2, 3, 5, 7 = 7 out of 8.
- 10) **Choice D is correct.** (7.SP.6) Experimental probability of passing = $\frac{980}{1000} = 0.98$. We use this rate to predict outcomes in a larger sample: $0.98 \times 5000 = 4900$ expected passing bulbs.
- 11) **Choice A is correct.** (7.SP.1-7.SP.4) The largest stem is 7 with the largest leaf 6, giving 76.
- 12) **Choice D is correct.** (7.RP.3) Estimate X: $\frac{55-60}{60} \times 100\% \approx 8.3\%$. Estimate Y: $\frac{62-60}{60} \times 100\% \approx 3.3\%$. Estimate Y has smaller error, making it the better estimate.
- 13) **Choice A is correct.** (7.EE.1-7.EE.2) Expand: $5(2n) - 5(3) - 4 = 10n - 15 - 4 = 10n - 19$.
- 14) **Choice C is correct.** (7.RP.3) $I = 2000 \times 0.035 \times 5 = \350 . Convert 3.5% to 0.035.
- 15) **Choice D is correct.** (7.RP.1-7.RP.3) If $\frac{1}{8}$ inch = 1 foot, then 1 inch = 8 feet. So $3.5 \times 8 = 28$ feet.
- 16) **Choice C is correct.** (7.RP.3) $\frac{16}{40} = \frac{2}{5} = 0.40 = 40\%$.
- 17) **The correct answer is 44.** (7.G.4-7.G.6) $C = 2\pi r = 2 \times \frac{22}{7} \times 7 = 2 \times 22 = 44$ cm.
- 18) **Choice D is correct.** (7.RP.3) Selling price = cost $\times 1.30$. So $84 = \text{cost} \times 1.30$, giving cost = $84 \div 1.30 \approx \$64.62$.
- 19) **The correct answer is A,B.** (7.G.4-7.G.6) Choice A: Diameter = $2r = 2 \times 6 = 12$ m is correct. Choice B: Area = $3.14 \times 6^2 = 113.04 \text{ m}^2$ is correct. C confuses circumference with area (37.68 m vs m^2). D fails because square area is 36 m^2 , much less than circle's 113.04 m^2 .
- 20) **Choice C is correct.** (7.NS.1b) Starting at -2 and jumping right to 6 means moving right by 8 units (from -2 to 0 is 2, then 0 to 6 is 6, total $2 + 6 = 8$). So $-2 + 8 = 6$.
- 21) **Choice A is correct.** (7.EE.1) Combine like terms: $(-2m - 5m) + (3n + n) = -7m + 4n$.
- 22) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 4 and 8 is 4. Factor: $4x + 8y = 4(x + 2y)$.
- 23) **Choice C is correct.** (7.SP.1-7.SP.4) $162^\circ \div 360^\circ \times 100 = 45\%$.
- 24) **Choice A is correct.** (7.EE.4b) "Product of a number and -2 " is $-2n$; "is greater than 14" is > 14 .
- 25) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate = $\$84 \div 12 = \7 per photo.
- 26) **The correct answer is 343.** (7.G.4-7.G.6) $V = s^3 = 7^3 = 343 \text{ ft}^3$.
- 27) **Choice D is correct.** (7.NS.1-7.NS.3) $\frac{1}{4} - \frac{3}{4} = -\frac{2}{4} = -\frac{1}{2}$.
- 28) **Choice C is correct.** (7.NS.2d) Divide $7 \div 20 = 0.35$, not 0.7. The student may have confused the operation or misread the fraction.
- 29) **Choice A is correct.** (7.NS.1-7.NS.3) Elevation gain: $250 - 100 = 150$ meters.
- 30) **Choice C is correct.** (7.NS.1-7.NS.3) $1.04 \times 10^6 = 1.04 \times 1,000,000 = 1,040,000$.



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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!

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FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED