

6

SOUTH DAKOTA

Smarter Balanced

GRADE

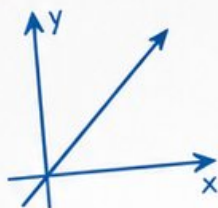
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED TESTS



2 ONLINE TESTS



USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



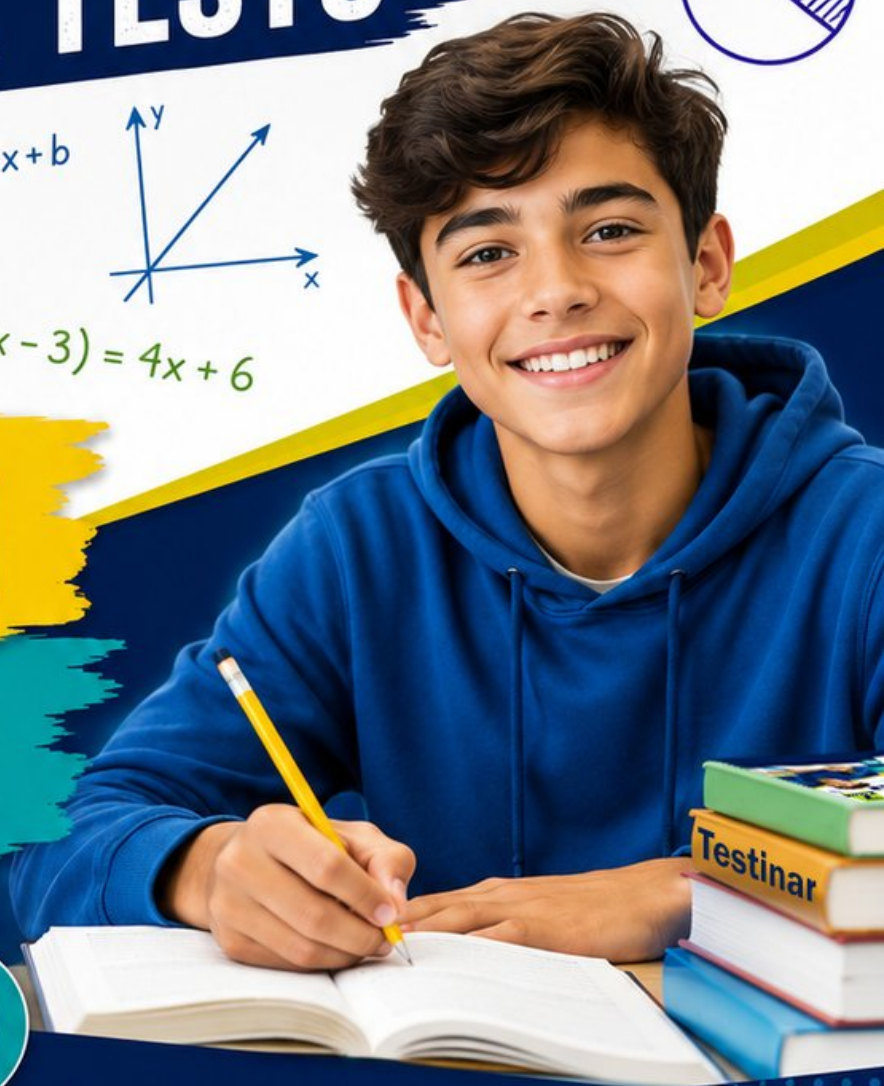
Strengthen
Math Skills



Detailed Answers
& Explanations

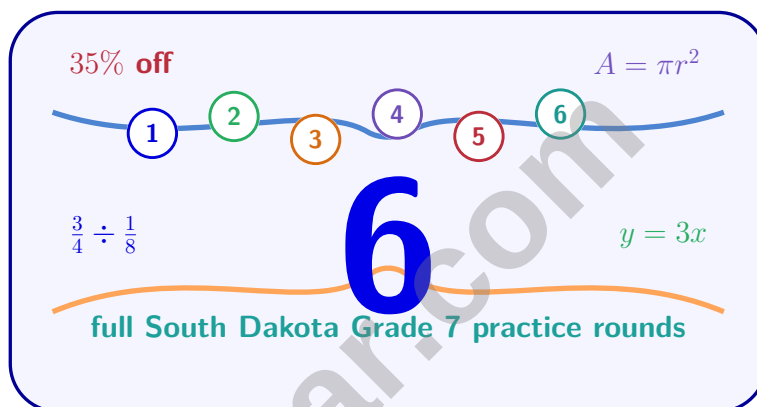


Improve Test
Performance



6 South Dakota Smarter Balanced Grade 7 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Six 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!

Six focused rounds for sharper Smarter Balanced math thinking

This book gives you six 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 six-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?

Six Smarter Balanced tests, 240 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.
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.



Scan me!
For more practice
& answers

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1) A cube has edge length 5 mm. What is its surface area?

☐ A. 25 mm^2

☐ B. 50 mm^2

☐ C. 125 mm^2

☐ D. 150 mm^2

2) A store sells 500 items. If $\frac{1}{10}$ are returned, how many items are kept?

☐ A. 50

☐ B. 250

☐ C. 450

☐ D. 490

3) Solve for x : $-3(x - 2) = 15$

☐ A. $x = -3$

☐ B. $x = -1$

☐ C. $x = 3$

☐ D. $x = 7$

4) Two sides of a triangle measure 7 cm and 10 cm. The angle between them is 60° . How many distinct triangles can be drawn?

☐ A. 0

☐ B. 1

☐ C. 2

☐ D. Infinitely many

5) A triangle has vertices at $A(1, 0)$, $B(3, 0)$, and $C(2, 2)$. If the triangle is reflected over the x -axis, what are the new coordinates of vertex C ?



6) A cylinder has a radius of 3 m and a height of 5 m. What is its volume? Use $\pi \approx 3.14$.

☐ A. 47.1 m^3

☐ C. 141.3 m^3

☐ B. 94.2 m^3

☐ D. 235.5 m^3

7) Two similar triangles have areas in the ratio 4 : 9. If the smaller triangle has a base of 8 cm, what is the base of the larger triangle?

8) A museum posts a survey on its website for visitors to complete. What is the PRIMARY limitation of this method?

☐ A. The survey is too long☐ C. It requires payment from visitors☐ B. It excludes non-internet users and☐ D. It uses systematic random sampling

creates voluntary response bias

9) Which pair of samples demonstrates a population with both higher center and greater reliability?

☐ A. Mean 50, MAD 8 vs. Mean 52, MAD 12☐ C. Mean 50, MAD 8 vs. Mean 55, MAD 4☐ B. Mean 50, MAD 8 vs. Mean 45, MAD 3☐ D. Mean 50, MAD 8 vs. Mean 50, MAD 2

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- 10) A classroom door lock requires entering a code with one digit (0–9) followed by one letter (A–Z). How many possible codes exist?
- ☐ A. 36 ☐ C. 1000
☐ B. 260 ☐ D. 2600
- 11) A circle has a radius of 14 meters. What is its area? Use $\pi \approx \frac{22}{7}$.
- ☐ A. 88 m² ☐ C. 616 m²
☐ B. 308 m² ☐ D. 1232 m²
- 12) A line plot shows the number of rainy days per month for 12 months. There are 2 months with 8 rainy days, 4 months with 10 rainy days, 3 months with 12 rainy days, 2 months with 14 rainy days, and 1 month with 16 rainy days. What is the median number of rainy days?
- ☐ A. 8 days ☐ C. 11 days
☐ B. 10 days ☐ D. 12 days
- 13) A fair die is rolled. What is the probability of rolling an even number?
- ☐ A. $\frac{1}{6}$ ☐ C. $\frac{1}{2}$
☐ B. $\frac{2}{6}$ ☐ D. $\frac{2}{3}$
- 14) Two spinners are spun. Spinner A has 5 equal sections, and Spinner B has 3 equal sections. If each outcome on Spinner A has probability $\frac{1}{5}$ and each outcome on Spinner B has probability $\frac{1}{3}$, what is $P(\text{specific outcome on A AND specific outcome on B})$?
- ☐ A. $\frac{2}{8}$ ☐ C. $\frac{1}{8}$
☐ B. $\frac{1}{15}$ ☐ D. $\frac{1}{5} + \frac{1}{3} = \frac{8}{15}$



1) Is $0.333\dots$ (or $0.\overline{3}$) a terminating or repeating decimal?

☐ A. Terminating

☐ C. Both

☐ B. Repeating

☐ D. Neither

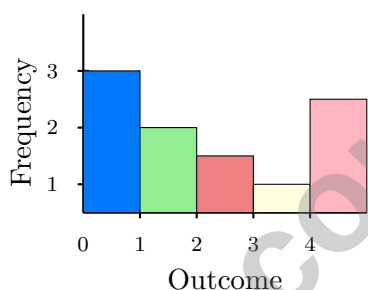
2) A car's value is \$15 000 after a 40% depreciation. What was the original value?

☐ A. \$9 000

☐ C. \$25 000

☐ B. \$21 000

☐ D. \$37 500



3)

Based on the bar graph showing 100 simulation trials, what is the estimated probability of Outcome 1?

☐ A. 0.10

☐ C. 0.25

☐ B. 0.15

☐ D. 0.30

4) A student chooses a shirt from 5 options and pants from 3 options. How many different outfits are possible?

☐ A. 8

☐ C. 20

☐ B. 15

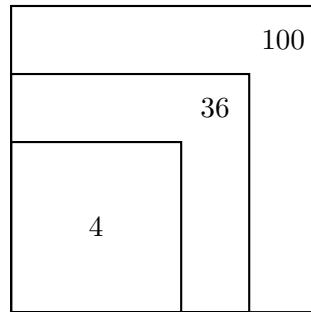
☐ D. 25



- 5) A bag contains 2 red, 3 blue, and 5 green marbles. If a marble is drawn twice WITHOUT replacement, which of the following is true?
- ☐ A. Each draw has the same probability ☐ C. Both events are independent
☐ B. The second draw depends on the first draw ☐ D. $P(\text{second draw}) = P(\text{first draw})$
- 6) A marble is drawn from a bag, its color is recorded, and it is returned. After 800 draws, a blue marble was drawn 216 times. If the experiment is repeated with 1200 draws, approximately how many times would you expect to draw a blue marble?
- ☐ A. 324 ☐ C. 432
☐ B. 216 ☐ D. 648
- 7) A coach estimated a player could jump 2.4 meters, but the player jumped 2 meters. What is the percent error?
- ☐ A. 80% ☐ C. 23.5%
☐ B. 16.7% ☐ D. 20%
- 8) Expand: $-6(2 - 3p)$
- ☐ A. $-12 + 18p$ ☐ C. $12 + 18p$
☐ B. $-12 - 18p$ ☐ D. $-12 - 3p$
- 9) A restaurant owner borrows \$10000 at 7.2% simple interest for 2.5 years to buy kitchen equipment. How much total interest will be paid?
- ☐ A. \$1440 ☐ C. \$2000
☐ B. \$2500 ☐ D. \$1800



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1)

Based on the areas shown, what are the side lengths?

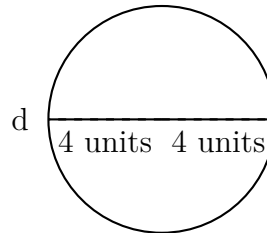
☐ A. 2, 6, 10☐ C. 2, 8, 10☐ B. 2, 6, 12☐ D. 4, 6, 10

2) A model rocket is 24 inches tall. The actual rocket is 60 feet tall. What is the scale factor of the model?

☐ A. 1 : 10☐ C. 1 : 60☐ B. 1 : 30☐ D. 1 : 120

3) Two triangles both have side lengths 5, 5, and 7. How many corresponding side lengths match?





4)

The diameter of this circle is 8 units. What is the circumference? Use $\pi \approx 3.14$.

☐ A. 12.56 units☐ C. 50.24 units☐ B. 25.12 units☐ D. 200.96 units

5) A box plot for test scores shows: minimum = 55, $Q1 = 70$, median = 80, $Q3 = 88$, maximum = 98. About what percentage of students scored between 70 and 88?

☐ A. 25%☐ C. 75%☐ B. 50%☐ D. 100%

6) A deck contains 52 cards: 13 hearts, 13 diamonds, 13 clubs, and 13 spades. A card is drawn at random. What is the probability of drawing a heart or a diamond?

☐ A. $\frac{1}{4}$ ☐ C. $\frac{3}{13}$ ☐ B. $\frac{1}{2}$ ☐ D. $\frac{1}{3}$

7) Which expression is equivalent to $0.98x$?

☐ A. $x + 0.98x$ ☐ C. $0.98 + x$ ☐ B. $x - 0.02x$ ☐ D. $0.02x - x$ 

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& answers

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 D is correct.** (7.G.4-7.G.6) $SA = 6s^2 = 6(5)^2 = 6(25) = 150 \text{ mm}^2$.
- 2) **Choice C is correct.** (7.RP.3) Returns: $\frac{1}{10} \times 500 = 50$. Kept: $500 - 50 = 450$. Note: $\frac{1}{10} = 0.1 = 10\%$.
- 3) **Choice A is correct.** (7.EE.4a) Distribute: $-3x + 6 = 15$. Subtract 6: $-3x = 9$. Divide by -3 : $x = -3$.
- 4) **Choice B is correct.** (7.G.1-7.G.5) When two sides and the angle between them are given, exactly one triangle can be constructed (up to congruence).
- 5) **The correct answer is (2, -2).** (7.G.1-7.G.5) Reflection over the x -axis uses the rule $(x, y) \rightarrow (x, -y)$. Applying this to $C(2, 2)$: $C' = (2, -2)$.
- 6) **Choice C is correct.** (7.G.4-7.G.6) Volume of a cylinder $= \pi r^2 h \approx 3.14 \times 3^2 \times 5 = 3.14 \times 9 \times 5 = 141.3 \text{ m}^3$.
- 7) **The correct answer is 12.** (7.G.1-7.G.5) Area ratio $4 : 9$ gives linear scale factor $\sqrt{4} : \sqrt{9} = 2 : 3$. Larger base $= 8 \times \frac{3}{2} = 12 \text{ cm}$.
- 8) **Choice B is correct.** (7.SP.1-7.SP.4) Online surveys miss non-internet users and only attract interested respondents who choose to complete the survey, introducing coverage bias and voluntary response bias.
- 9) **Choice C is correct.** (7.SP.1-7.SP.4) Higher center means higher average; lower MAD means greater reliability (less variability). Only option C shows both: mean $55 > 50$ (higher) and MAD $4 < 8$ (more reliable).
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) Digits: 10 (0–9); letters: 26 (A–Z). Total: $10 \times 26 = 260$ possible codes.
- 11) **Choice C is correct.** (7.G.4-7.G.6) $A = \frac{22}{7} \times 14^2 = \frac{22}{7} \times 196 = 22 \times 28 = 616 \text{ m}^2$.
- 12) **Choice C is correct.** (7.SP.1-7.SP.4) With 12 data points, the median is the average of the 6th and 7th values. Counting: positions 1–2 are 8, positions 3–6 are 10, position 7–9 are 12. The 6th and 7th values average to 11.
- 13) **Choice C is correct.** (7.SP.5-7.SP.8) Even numbers: 2, 4, 6 (3 outcomes). $P(\text{even}) = \frac{3}{6} = \frac{1}{2}$.
- 14) **Choice B is correct.** (7.SP.5-7.SP.8) Independent events: $P(A \text{ and } B) = \frac{1}{5} \cdot \frac{1}{3} = \frac{1}{15}$.
- 15) **Choice B is correct.** (7.SP.5-7.SP.8) By definition, an impossible event has probability 0 and a certain event has probability 1.
- 16) **Choice B is correct.** (7.SP.1-7.SP.4) $\frac{45}{120} = \frac{x}{840}$. Reduce to $\frac{3}{8} = \frac{x}{840} \Rightarrow x = 315$.
- 17) **Choice D is correct.** (7.RP.3) Percent error $= \frac{|3 - 3.6|}{3.6} \times 100\% = \frac{0.6}{3.6} \times 100\% \approx 16.7\%$.
- 18) **Choice A is correct.** (7.EE.1-7.EE.2) Expand: $12k + 6 + 3k - 6 = 15k$. Combine like terms.
- 19) **The correct answer is 13.** (7.G.4-7.G.6) Use $r = \frac{d}{2}$: $r = \frac{26}{2} = 13 \text{ meters}$.
- 20) **Choice D is correct.** (7.RP.3) $I = 500 \times 0.03 \times 2 = \30 .
- 21) **The correct answer is B, C.** (7.G.1-7.G.5) B and C are equivalent and correct: two angles are equal (50° each), so by the Isosceles Triangle Theorem, the sides opposite those angles must be equal. A is wrong (equilateral requires all angles 60°). D is wrong (two angles are the same).
- 22) **Choice C is correct.** (7.RP.3) 85% of 40 is $0.85 \times 40 = 34$ questions.
- 23) **Choice D is correct.** (7.RP.3) Markup $= 0.35 \times 600 = \$210$. Selling price $= 600 + 210 = \$810$.
- 24) **Choice B is correct.** (7.NS.1-7.NS.3) $7 - (-2) - 5 = 7 + 2 - 5 = 9 - 5 = 4$. Convert the subtraction of a negative first.
- 25) **Choice A is correct.** (7.EE.1) Combine: $(-2 - 3 + 1)n = -4n$.
- 26) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of coefficients 30, 18, 6 is 6. Factor: $30x - 18y + 6 = 6(5x - 3y + 1)$.
- 27) **Choice C is correct.** (7.SP.1-7.SP.4) 45% of 365 $\approx 0.45 \times 365 = 164.25 \approx 164$ days.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply: $18 \times 4 = 72$ feet. Student divided instead of multiplied (flipped the operation).
- 29) **Choice D is correct.** (7.NS.1b) Add from left to right: $-4 + 6 = 2$, then $2 + (-2) = 0$. Alternatively, combine the negatives: $-4 + (-2) = -6$, then $-6 + 6 = 0$.
- 30) **Choice A is correct.** (7.EE.4b) When dividing by a negative number, always flip the inequality sign. Here: $-5x \geq 20 \Rightarrow x \leq -4$.



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 6 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 **6** 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:

6 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.



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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