

8

South Dakota

Smarter Balanced

GRADE 7

MATH

PRACTICE TESTS



Standards Aligned
Problem Solving

For Comprehensive
Assessment Programs



8 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 SKILLS



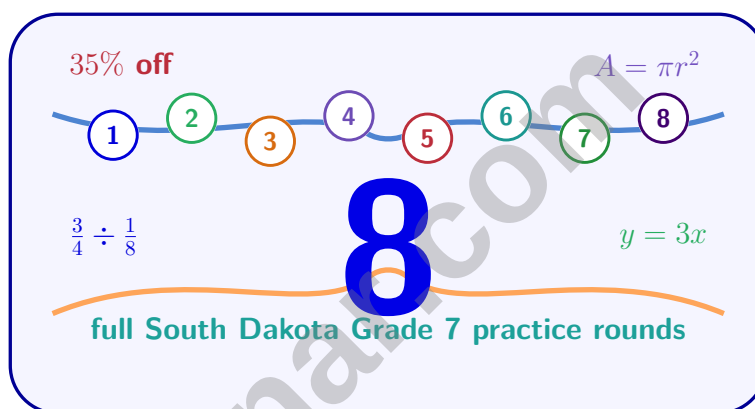
THINK SMARTER



BE TEST-READY

8 South Dakota Smarter Balanced Grade 7 Math Practice Tests

A focused rehearsal for South Dakota Grade 7 ratios, equations, transformations, similar figures, population data, and chance



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, South Dakota Grade 7 Problem Solver!

Eight focused rounds for sharper Smarter Balanced math thinking

This book gives you eight 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

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.

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?

Eight Smarter Balanced tests, 320 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) A camera's price decreased by \$120, representing a 15% discount. What was the original price?

☐ A. \$1 200

☐ C. \$520

☐ B. \$720

☐ D. \$800

2) Solve: $\frac{3x}{4} < 9$

☐ A. $x < 12$

☐ C. $x > 12$

☐ B. $x < \frac{12}{3}$

☐ D. $x < \frac{36}{4}$

3) Evaluate $5a + 3b - 2$ when $a = 2$ and $b = -1$.

☐ A. 15

☐ C. 11

☐ B. 8

☐ D. 5

4) A concert ticket costs \$35 and a service fee is \$6.50 per ticket. If someone buys 3 tickets, what is the total cost?

☐ A. $3(35 + 6.50) = \$124.50$

☐ C. $35 + 3 + 6.50 = \$44.50$

☐ B. $3(35) + 3(6.50) = \$124.50$

☐ D. $35(3) + 6.50 = \$111.50$

5) Which of the following is the correct first step to solve $4x - 3 = 13$?

☐ A. Subtract 4 from both sides

☐ C. Divide both sides by 4

☐ B. Add 3 to both sides

☐ D. Multiply both sides by 4

6) Maya runs at a constant speed. The relationship between distance (miles) and time (hours) is proportional and passes through (3, 18). How far does she run per hour?

☐ A. 3 miles per hour

☐ C. 15 miles per hour

☐ B. 54 miles per hour

☐ D. 6 miles per hour



7) Maria has a loss of \$45 that she shares equally among 5 friends. How much does each friend owe?

☐ A. Each friend owes \$9

☐ C. Each friend owes $-\$9$

☐ B. Each friend receives \$9

☐ D. Cannot be divided

8) A climber ascends 150 feet then descends 210 feet. What is the net change in elevation?

☐ A. -360 ft

☐ C. 60 ft

☐ B. -60 ft

☐ D. 360 ft

9) Between which two integers is $\sqrt{45}$ located?

☐ A. between 5 and 6

☐ C. between 7 and 8

☐ B. between 6 and 7

☐ D. between 8 and 9

10) Simplify: $\left(\frac{x^4}{x^2}\right)^3$

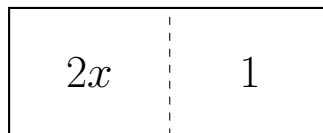
☐ A. x^6

☐ C. x^{18}

☐ B. x^9

☐ D. x^{12}

$3\times$



11)

$$3(2x + 1) = 21$$

Solve for x : $3(2x + 1) = 21$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 5$



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12) Solve: $6x - 15 = 3$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 5$

13) A probability model has outcomes $\{1, 2, 3, 4, 5\}$ with $P(1) = 0.1$, $P(2) = 0.2$, $P(3) = 0.3$, $P(4) = 0.25$, $P(5) = ?$. Find $P(5)$.

☐ A. 0.15

☐ C. 0.45

☐ B. 0.25

☐ D. Cannot be determined

14) What is $\frac{2}{3} \times \frac{5}{6}$?

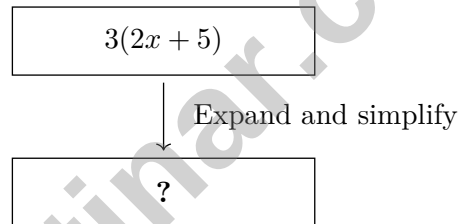
☐ A. $\frac{7}{9}$

☐ C. $\frac{10}{9}$

☐ B. $\frac{10}{18}$

☐ D. $\frac{30}{2}$

15)



What expression goes in the box marked ??

☐ A. $3 + 2x + 5$

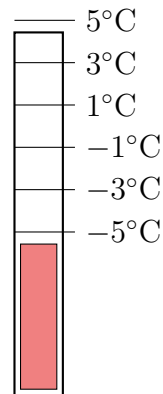
☐ C. $5x + 8$

☐ B. $6x + 15$

☐ D. $2x + 5 + 3$

16) A bank account earns 3% annual interest on a balance of \$1 000. How much interest will the account earn in one year?





1)

The thermometer shows the current temperature. If the temperature drops 2°C , what will the new temperature be?

☐ A. -7°C ☐ C. -3°C ☐ B. -5°C ☐ D. 3°C 2) Simplify: $(o^5 \cdot o^3)^2$ ☐ A. o^{10} ☐ C. o^{64} ☐ B. o^{16} ☐ D. o^8 3) Solve for x : $9(x + 2) = 63$ ☐ A. $x = 3$ ☐ C. $x = 7$ ☐ B. $x = 5$ ☐ D. $x = 9$

4) A scale drawing shows a rectangular room with dimensions $5\text{ cm} \times 3\text{ cm}$. The scale is $1\text{ cm} : 3\text{ m}$. What is the area of the actual room in square meters?

☐ A. 15 m^2 ☐ C. 135 m^2 ☐ B. 45 m^2 ☐ D. 225 m^2 

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5) A student claims that $x + x + x + 5 = 3x + 5$ and $x(3 + 5) = 3x + 5$. Which statement is true?

- ☐ A. Both claims are correct
☐ B. Only the first claim is correct
☐ C. Only the second claim is correct
☐ D. Neither claim is correct

6) Marcus walks 12 meters east. To return to his starting point, he must walk 12 meters west. Which number represents his westward walk?

- ☐ A. -12 (opposite direction)
☐ B. 12 (same direction as eastward walk)
☐ C. 0 (no displacement)
☐ D. -24 (double the distance in opposite direction)

7) A student rolls a die labeled 1 to 6 and picks a fruit from {Apple, Orange, Banana}. The student claims there are 18 outcomes in the sample space. Is this correct?

- ☐ A. Yes, $6 \times 3 = 18$
☐ B. No, there are only 9 outcomes
☐ C. No, there are 24 outcomes
☐ D. No, there are 36 outcomes

8) A dot plot shows the number of hours 10 students studied for a math test. The data is: 1, 1, 1, 2, 2, 2, 2, 3, 4, 5. What is the median?

- ☐ A. 1 hour
☐ B. 2 hours
☐ C. 3 hours
☐ D. 5 hours

9) A spinner labeled 1–8 is spun. A student claims $P(\text{rolling an odd number}) = \frac{4}{8}$, then says this equals $\frac{1}{2}$. Is the second step correct?

- ☐ A. No; $\frac{4}{8}$ cannot be simplified.
☐ B. Yes; $\frac{4}{8} = \frac{1}{2}$.
☐ C. No; $\frac{4}{8} = \frac{2}{4}$.
☐ D. No; the count is wrong; it should be $\frac{5}{8}$.



1) Simplify: $\frac{s^{14} \cdot s^3}{s^8}$

☐ A. s^{17}

☐ C. s^9

☐ B. s^{25}

☐ D. s^5

2) An angle is 3 times its complement. What is the measure of the larger angle?

☐ A. 67.5°

☐ C. 22.5°

☐ B. 45°

☐ D. 90°

3) A dot plot shows the number of text messages sent by 12 students in one day: 5, 8, 10, 10, 12, 12, 12, 15, 18, 20, 22, 25. Which measure BEST represents the “typical” number of messages sent?

☐ A. The mean (approximately 14.3)

☐ C. The mode (12)

☐ B. The median (12.5)

☐ D. The range (20)

4) A standard six-sided die is rolled. The model is uniform. Find $P(\text{prime})$.

☐ A. $\frac{1}{6}$

☐ C. $\frac{1}{2}$

☐ B. $\frac{1}{3}$

☐ D. $\frac{2}{3}$

5) Two standard dice are rolled. Which probability represents rolling two dice and getting a sum of 7?

Example sum of 7

$$\boxed{1} + \boxed{6} = 7$$

☐ A. $\frac{6}{36}$

☐ C. $\frac{6}{12}$

☐ B. $\frac{7}{36}$

☐ D. $\frac{1}{3}$



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6) A store marks up a product by \$5 on a cost of \$25. What is the selling price?

☐ A. \$35

☐ C. \$20

☐ B. \$45

☐ D. \$30

7) What is $-9 - (-3)$?

☐ A. -12

☐ C. 6

☐ B. 12

☐ D. -6

8) Which expression is simplified?

☐ A. $3x + 2x - y$

☐ C. $5x - y$

☐ B. $5x + 2x - y + y$

☐ D. $2x + 3x + 4y$

9) Which expression is equivalent to $3(2y + 7)$?

☐ A. $6y + 21$

☐ C. $3y + 10$

☐ B. $6y + 7$

☐ D. $2y + 21$

10) A cube has edge length 4 cm. What is the total surface area?

☐ A. 16 cm^2

☐ C. 96 cm^2

☐ B. 64 cm^2

☐ D. 128 cm^2



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.RP.3) The decrease of \$120 represents 15% of the original price. So if the original price is x , then $0.15x = 120$, which gives $x = 120 \div 0.15 = 800$.
- 2) **Choice A is correct.** (7.EE.4b) Multiply both sides by $\frac{4}{3}$: $x < 9 \cdot \frac{4}{3} = \frac{36}{3} = 12$.
- 3) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $5(2) + 3(-1) - 2 = 10 - 3 - 2 = 5$.
- 4) **Choice A is correct.** (7.EE.4a) Each ticket (including fee) costs $35 + 6.50 = \$41.50$. For 3 tickets: $3(41.50) = \$124.50$.
- 5) **Choice B is correct.** (7.EE.3-7.EE.4) When the constant is subtracted, reverse the operation by adding. This gives $4x = 16$.
- 6) **Choice D is correct.** (7.RP.1-7.RP.3) From the point (3, 18), the unit rate is $18 \div 3 = 6$ miles per hour.
- 7) **Choice A is correct.** (7.NS.1-7.NS.3) A loss of \$45 is represented as -45 . Dividing: $(-45) \div 5 = -9$ means each owes \$9 (or is owed \$-9).
- 8) **Choice B is correct.** (7.NS.1-7.NS.3) Net change: $150 - 210 = -60$ feet.
- 9) **Choice B is correct.** (7.NS.1-7.NS.3) $6^2 = 36$ and $7^2 = 49$. Since $36 < 45 < 49$, we have $6 < \sqrt{45} < 7$.
- 10) **Choice A is correct.** (7.EE.1-7.EE.2) First simplify inside parentheses: $\frac{x^4}{x^2} = x^{4-2} = x^2$. Then apply power rule: $(x^2)^3 = x^{2 \times 3} = x^6$.
- 11) **Choice B is correct.** (7.EE.4a) Distribute: $6x + 3 = 21$. Subtract 3: $6x = 18$. Divide by 6: $x = 3$.
- 12) **Choice B is correct.** (7.EE.3-7.EE.4) Add 15: $6x = 18$. Divide by 6: $x = 3$.
- 13) **Choice A is correct.** (7.SP.5-7.SP.8) Probabilities must sum to 1: $0.1 + 0.2 + 0.3 + 0.25 + P(5) = 1 \Rightarrow P(5) = 0.15$.
- 14) **Choice B is correct.** (7.NS.2) $\frac{2}{3} \times \frac{5}{6} = \frac{2 \times 5}{3 \times 6} = \frac{10}{18} = \frac{5}{9}$ (simplified). Multiply numerators and denominators, then reduce.
- 15) **Choice B is correct.** (7.EE.1-7.EE.2) Expanding $3(2x + 5)$ gives $3 \cdot 2x + 3 \cdot 5 = 6x + 15$.
- 16) **The correct answer is \$30.** (7.RP.3) Interest earned: $0.03 \times 1000 = \$30$.
- 17) **Choice A is correct.** (7.SP.3) Company P's median (50) and Q3 (65) are both higher than Company Q's (48 and 60). These measures indicate Company P's typical and upper-quartile salaries are higher.
- 18) **The correct answer is $3\frac{1}{2}$.** (7.NS.1-7.NS.3) Common denominator 6: $6\frac{2}{6} - 2\frac{5}{6} = 5\frac{8}{6} - 2\frac{5}{6} = 3\frac{3}{6} = 3\frac{1}{2}$.
- 19) **Choice C is correct.** (7.RP.3) Usage fee = $0.05 \times 10000 = \$500$. Total = $300 + 500 = \$1,300$.
- 20) **Choice C is correct.** (7.RP.1-7.RP.3) Ratio 3 : 5 means for every 3 savings, there are 5 spending. If spending = 50, then savings = $\frac{3}{5} \times 50 = 30$.
- 21) **The correct answer is B,C.** (7.RP.3) Estimate 1: $\frac{|30-40|}{40} \times 100\% = 25\%$. Estimate 2: $\frac{|45-50|}{50} \times 100\% = 10\%$. Estimate 3: $\frac{|60-80|}{80} \times 100\% = 25\%$. Therefore B (Estimate 2 most accurate) and C (same error for 1 and 3) are correct. A is false (2 is more accurate). D is false (1 and 3 are equal, not 3 better).
- 22) **Choice A is correct.** (7.G.4-7.G.6) Square: $15 \times 15 = 225 \text{ cm}^2$. Notch: $4 \times 3 = 12 \text{ cm}^2$. Hole: $3.14 \times 4 = 12.56 \text{ cm}^2$. Remaining: $225 - 12 - 12.56 = 200.44 \text{ cm}^2$.
- 23) **Choice A is correct.** (7.G.4-7.G.6) Original volume = $3 \times 4 \times 6 = 72 \text{ cm}^3$. When all dimensions are halved, volume is divided by $2^3 = 8$. Smaller prism volume = $72/8 = 9 \text{ cm}^3$.
- 24) **Choice A is correct.** (7.G.1-7.G.5) The sum of angles in a triangle is 180° . Third angle = $180^\circ - 50^\circ - 60^\circ = 70^\circ$.
- 25) **Choice C is correct.** (7.G.4-7.G.6) An arc is any portion of the circle's perimeter (circumference).
- 26) **The correct answer is 14.** (7.EE.1-7.EE.2) The expression simplifies to $5a + 4$. With $a = 2$, the value is $10 + 4 = 14$.
- 27) **Choice B is correct.** (7.G.1-7.G.5) Given three specific side lengths that satisfy the Triangle Inequality, exactly one unique triangle (up to congruence) can be formed. In fact, this is a right triangle because $6^2 + 8^2 = 10^2$.
- 28) **The correct answer is 26.** (7.EE.1-7.EE.2) Perimeter is $12r + 2$. With $r = 2$, the value is $24 + 2 = 26$.
- 29) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{not like}) = 1 - \frac{7}{8} = \frac{1}{8}$. Expected: $\frac{1}{8} \times 80 = 10$.
- 30) **Choice C is correct.** (7.SP.1-7.SP.4) Morning: $\frac{45}{60} = 0.75$ or 75%. Afternoon: $\frac{54}{72} = 0.75$ or 75%. Both show equal proportions.



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You Know More Than You Think

Hi, Skilled Learner!

◇ After working through Grade 7 practice, you now have more tools than you may realize: models, formulas, graphs, equations, and reasoning habits. ◇

★ **Remember this:** The next step is learning when to use each tool. That comes from practice, review, and the courage to try a method even when you are unsure. This version gave you 8 opportunities to rehearse test-day habits. ★

Tools You Can Use

- **Models:** Make relationships visible.
- **Equations:** Represent unknowns clearly.
- **Graphs:** Show change and location.
- **Formulas:** Organize measurement problems.

Grade 7 test-day tip: Before solving, name the tool you plan to use. That small choice makes your work more intentional.

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

Jay Daie

Your Skill-Building Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** 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:

8 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
- ✓ 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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