

3

South Dakota

Smarter Balanced

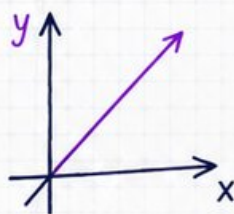
GRADE

7

MATH

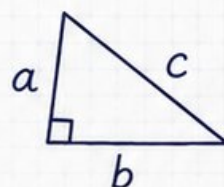
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



$$3(x - 2) = 2x + 5$$



3 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



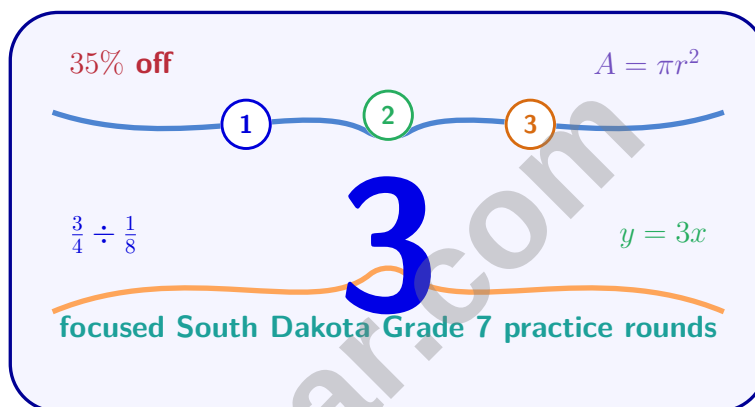
Detailed Answers
& Explanations



Improve Test
Performance

3 South Dakota Smarter Balanced Grade 7 Math Practice Tests

Smarter Balanced Math Practice for Grade 7 Mastery and Review



Three 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!

Three focused rounds for sharper Smarter Balanced math thinking

This book gives you three 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 three-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?

Three Smarter Balanced tests, 120 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.
Test 3	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

Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	29
★ Practice Test 3	_____	44
Practice Test Answer Keys	_____	59
Practice Test Answers and Explanations	_____	62

1) An error analysis: A student wrote $|-9| = -9$. What is the correct value, and why is the student wrong?

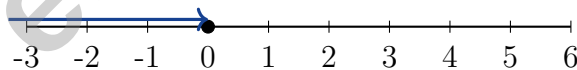
- ☐ A. Correct: $|-9| = -9$; student is right
- ☐ B. Correct: $|-9| = 18$; doubling the number
- ☐ C. Correct: $|-9| = 0$; distance from zero is zero
- ☐ D. Correct: $|-9| = 9$; absolute value is always non-negative

2) A mountain climber is at 200 meters above sea level. She descends 350 meters. At what elevation is she now? Write your answer as an integer.

3) A student estimated her project would weigh 850 grams. The actual weight is 1000 grams. What is the percent error?

- ☐ A. 17.6%
- ☐ B. 82.4%
- ☐ C. 20%
- ☐ D. 15%

4) What inequality does this number line show?



- ☐ A. $x > 0$
- ☐ B. $x < 0$
- ☐ C. $x \geq 0$
- ☐ D. $x \leq 0$



5) Expand: $-5(4 - n)$

☐ A. $-20 + 5n$

☐ C. $20 + 5n$

☐ B. $-20 - 5n$

☐ D. $5n - 4$

6)

Year	Starting Balance	Interest Earned	Ending Balance	Rate
1	\$2000	\$80	\$2080	?
2	\$2080	\$80	\$2160	?
3	\$2160	\$80	\$2240	?

What annual interest rate does this account offer?

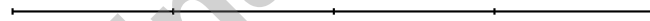
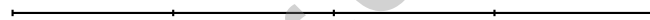
☐ A. 2%

☐ C. 6%

☐ B. 8%

☐ D. 4%

0% 25% 50% 75% 100%



7)

0 ? 60 ? 120

On the double number line, what value corresponds to 25% if 100% equals 120?

☐ A. 15

☐ C. 25

☐ B. 20

☐ D. 30

8) Store A sells $\frac{2}{5}$ pound of butter for \$2. Store B sells $\frac{3}{4}$ pound for \$2.25. What is the lower price per pound?



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9) Simplify: $4m^2 + 7m + 2m^2 - 3m$

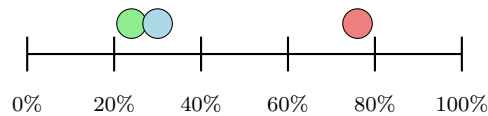
☐ A. $6m^2 + 4m$

☐ C. $11m^2 + 4m$

☐ B. $6m^3 + 4m$

☐ D. $6m^2 - m$

Estimated Probabilities



10)

Three simulation estimates are plotted on the number line: 0.24 (green), 0.38 (blue), and 0.76 (red). If the true theoretical probability is 0.25, which estimate has the smallest error?

☐ A. Green at 0.24

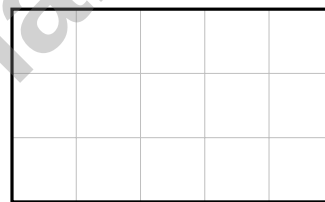
☐ C. Red at 0.76

☐ B. Blue at 0.38

☐ D. All three have equal error

Scale: 1 inch = 4 feet

3 inches



Bedroom Floor Plan

5 inches

11)

According to the floor plan, what is the actual area of the bedroom?

☐ A. 15 square feet

☐ C. 120 square feet

☐ B. 60 square feet

☐ D. 240 square feet



\$25 base	\$15 per hour $\times h$
-----------	--------------------------

1) Total cost C

An electrician's fee is shown as a bar diagram. The fixed fee is \$25 and the hourly rate is \$15 per hour. Which equation represents the total cost C for h hours?

☐ A. $C = 15h + 25$

☐ C. $C = 25 + 15$

☐ B. $C = 25h + 15$

☐ D. $C = (25 + 15)h$



6 cm
Scale: 1 cm : 3 m

2)

A scale drawing shows a field with dimensions 6 cm by 4 cm. What is the perimeter of the actual field in meters?

☐ A. 20 m

☐ C. 60 m

☐ B. 30 m

☐ D. 120 m

3) A cone is sliced horizontally (parallel to its circular base). What is the shape of the cross-section?

☐ A. Rectangle

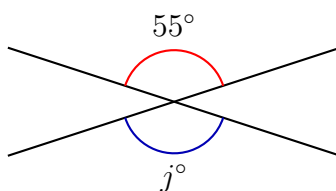
☐ C. Circle

☐ B. Triangle

☐ D. Ellipse



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4)

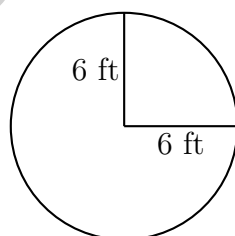
Two intersecting lines form vertical angles. One angle is marked as 55° . What is the measure of angle j vertically opposite to it?

☐ A. 35° ☐ C. 125° ☐ B. 55° ☐ D. 235°

5) A quadrilateral has vertices at $(0, 1)$, $(3, 1)$, $(3, 4)$, and $(0, 4)$. If each vertex is reflected over the line $y = x$, which of the following is a new vertex?

☐ A. $(1, 0)$ ☐ C. $(0, 3)$ ☐ B. $(4, 3)$ ☐ D. $(3, 0)$

6) If $\frac{x}{6} = \frac{12}{8}$, what is the value of x ?

☐ A. 4☐ C. 9☐ B. 8☐ D. 16

7)

The radius of this circle is 6 feet. What is its circumference? Use $\pi \approx \frac{22}{7}$.

☐ A. $\frac{132}{7}$ ft☐ C. $\frac{66}{7}$ ft☐ B. $\frac{264}{7}$ ft☐ D. $\frac{792}{7}$ ft

1) An item costs \$72 after a 20% discount. What was the original price?

☐ A. \$360

☐ C. \$57.60

☐ B. \$86.40

☐ D. \$90

2) A biased spinner has $P(\text{Win}) = 0.75$. If you spin once, what is $P(\text{Lose})$?

☐ A. 0.25

☐ C. 0.5

☐ B. 0.75

☐ D. -0.25

3) A restaurant bill is \$45. Marcus leaves an 18% tip. How much is the tip?

☐ A. \$6.75

☐ C. \$10.80

☐ B. \$14.40

☐ D. \$8.10

4)

Gross \$2000	Federal \$240	Social \$153	Net \$?
-----------------	------------------	-----------------	------------

A pay stub shows gross income of \$2 000, federal tax withholding of \$240, and Social Security withholding of \$153. What is the net pay?

☐ A. \$1 607

☐ C. \$1 847

☐ B. \$1 760

☐ D. \$1 900



- 5) Compare the total interest earned on \$2,000 over 4 years at 5% with compound vs. simple interest. Compound earns approximately how much more?

Year	Compound	Simple
1	\$2,100	\$2,100
2	\$2,205	\$2,200
3	\$2,315.25	\$2,300
4	\$2,431.01	\$2,400

- ☐ A. \$31.01 ☐ C. \$50
☐ B. \$30.50 ☐ D. \$100
- 6) A concert ticket costs \$80. With a \$12 service fee added, what is the percent increase from the original price?
- ☐ A. 12% ☐ C. 19.2%
☐ B. 80% ☐ D. 15%
- 7) Simplify: $4p + 6q + 2p - q$
- ☐ A. $6p + 5q$ ☐ C. $4p + 6q$
☐ B. $6p + 7q$ ☐ D. $12pq$
- 8) A simulation of drawing cards with replacement produces 60 trials. If outcome A appears 15 times and outcome B appears 45 times, what is the experimental error compared to the theoretical probability if outcome A has theoretical probability 0.20?
- ☐ A. 0.05 ☐ C. 0.15
☐ B. 0.10 ☐ D. 0.25



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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.NS.1-7.NS.3) Absolute value represents distance from zero, which is never negative. Since -9 is 9 units from zero, $|-9| = 9$. The student confused the opposite with absolute value.
- 2) **The correct answer is -150 .** (7.NS.1-7.NS.3) The elevation change is $200 - 350 = -150$. She is now 150 meters below sea level.
- 3) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|850-1000|}{1000} \times 100\% = \frac{150}{1000} \times 100\% = 15\%$.
- 4) **Choice D is correct.** (7.EE.4b) A closed circle at 0 with a left-pointing arrow indicates $x \leq 0$.
- 5) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -5 : $-5(4) - 5(-n) = -20 + 5n$.
- 6) **Choice D is correct.** (7.RP.3) With simple interest, interest is calculated from the original principal, so the interest earned each year stays constant. Year 1: $\$80 = \$2000 \times r \times 1 \Rightarrow r = 0.04 = 4\%$.
- 7) **Choice D is correct.** (7.RP.3) 25% is $\frac{1}{4}$ of the total. $\frac{1}{4} \times 120 = 30$.
- 8) **The correct answer is $\$3$.** (7.RP.1-7.RP.3) Store A costs $2 \div \frac{2}{5} = 5$ dollars per pound. Store B costs $2.25 \div \frac{3}{4} = 3$ dollars per pound, so the lower price is $\$3$.
- 9) **Choice A is correct.** (7.EE.1) Combine m^2 terms and m terms: $(4 + 2)m^2 + (7 - 3)m = 6m^2 + 4m$.
- 10) **Choice A is correct.** (7.SP.5-7.SP.8) Error for green: $|0.24 - 0.25| = 0.01$. Error for blue: $|0.38 - 0.25| = 0.13$. Error for red: $|0.76 - 0.25| = 0.51$. Green has the smallest error.
- 11) **Choice D is correct.** (7.RP.1-7.RP.3) Actual dimensions: $5 \times 4 = 20$ feet; $3 \times 4 = 12$ feet. Area = $20 \times 12 = 240$ sq ft.
- 12) **Choice D is correct.** (7.RP.3) Markup = $0.60 \times 500 = \$300$. Selling price = $500 + 300 = \$800$.
- 13) **Choice D is correct.** (7.NS.1b) Step-by-step: $-10 + 5 = -5$, then $-5 + (-3) = -8$. Or combine negatives first: $-10 + (-3) = -13$, then $-13 + 5 = -8$.
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) GCF is 3. Factor out the negative: $-6x - 9 = -3(2x + 3)$. Check: $-3(2x + 3) = -6x - 9$.
- 15) **Choice A is correct.** (7.EE.4b) "A number" is n ; "is more than" is $>$; "twice itself minus 5" is $2n - 5$. Direct translation: $n > 2n - 5$.
- 16) **Choice C is correct.** (7.G.4-7.G.6) The correct formula: $SA = 2(8 \cdot 4 + 8 \cdot 3 + 4 \cdot 3) = 2(32 + 24 + 12) = 2(68) = 136$ cm². The student added dimensions instead of multiplying them.
- 17) **The correct answer is 15.** (7.RP.1-7.RP.3) Ratio: $30/2 = 15$, $60/4 = 15$, $90/6 = 15$. Hourly wage is $\$15$; constant of proportionality is $k = 15$.
- 18) **The correct answer is B,D.** (7.SP.1-7.SP.4) Total is $280 + 420 + 100 = 800$. Online: $280/800 = 0.35 = 35\%$, so B is correct. In-store: $420/800 = 0.525 = 52.5\%$, so D is correct. A is wrong (not exactly 50%). C is wrong ($100/800 = 12.5\%$, not 10%).
- 19) **Choice B is correct.** (7.NS.1-7.NS.3) Q1 loss: $-\$450$. Q2 loss: $-\$225$ (half of Q1). Q3: $\$0$ (break even). Net: $-\$450 - \$225 + 0 = -\$675$.
- 20) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $2(5 - 3) + 5 = 2(2) + 5 = 4 + 5 = 9$.
- 21) **Choice A is correct.** (7.EE.3-7.EE.4) Add $\frac{1}{2}$ to both sides: $6x = \frac{11}{2} + \frac{1}{2} = \frac{12}{2} = 6$. Divide by 6: $x = 1$.
- 22) **Choice A is correct.** (7.G.1-7.G.5) Original drawing: 9 cm $\times$ 12 cm, perimeter = $2(9 + 12) = 42$ cm. New drawing: 18 cm $\times$ 24 cm, perimeter = $2(18 + 24) = 84$ cm. Ratio: $84/42 = 2$ times.
- 23) **Choice B is correct.** (7.G.4-7.G.6) Original: $V_1 = \pi r^2 h$. New: $V_2 = \pi(2r)^2 h = 4\pi r^2 h = 4V_1$.
- 24) **Choice B is correct.** (7.SP.1-7.SP.4) The population is the entire group being studied, which is the complete database of 50,000 customers. The sample is the 200 randomly selected customers.
- 25) **Choice D is correct.** (7.SP.1-7.SP.4) Group 1 has mean 82 but median 85. Since median is higher than mean, there are likely some very low scores pulling the mean down (low outliers).
- 26) **Choice D is correct.** (7.RP.1-7.RP.3) The diagram shows 6 equal parts totaling 18 miles. The equation is $6m = 18$, giving $m = 3$ miles per part. This represents a proportional relationship where each part measures the same distance.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) From $(2, 1.2)$, $k = 1.2 \div 2 = 0.6$. Verify: $(4, 2.4)$ gives $2.4 \div 4 = 0.6$; $(6, 3.6)$ gives $3.6 \div 6 = 0.6$. Unit rate is 0.6.



Hi, Grade 7 Math Star!

◇ You finished this practice set with real effort. Grade 7 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 7 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 7 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 7 Math Friend

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** 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:

3 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.



Detailed Answers & Explanations

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



Improve Test 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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FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY