

# 9 Delaware

# DeSSA

GRADE 7

# MATH

## PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs

Program



**9 PRINTED TESTS**



**2 ONLINE TESTS**



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



**BUILT FOR ACAP**  
Standards-Aligned



**STRENGTHEN  
SKILLS**



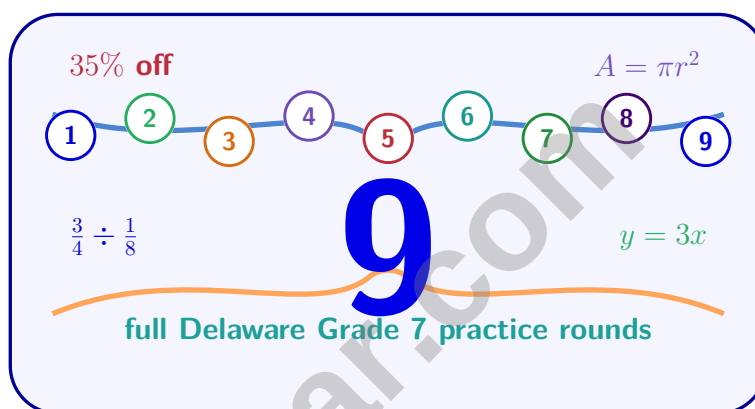
**SHARPEN  
THINKING**



**BE TEST-READY**  
Improve Performance

# 9 Delaware Smarter Balanced Grade 7 Math Practice Tests

*Standards-Aligned Delaware Practice for Proportional Reasoning, Expressions, Geometry, Statistics, and Probability*



Nine 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**



# Copyright ©

## Testinar Inc



Published by Testinar Inc

[Testinar.com](http://Testinar.com)

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



*Copyright ©*

# Welcome, Delaware Grade 7 Problem Solver!

Nine focused rounds for sharper Smarter Balanced math thinking

This book gives you nine 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 Delaware 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 nine-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.

**Delaware 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?

Nine Smarter Balanced tests, 360 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.                 |
| 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

# Table of Contents

|                                        |       |     |
|----------------------------------------|-------|-----|
| ★ Practice Test 1                      | _____ | 15  |
| ★ Practice Test 2                      | _____ | 30  |
| ★ Practice Test 3                      | _____ | 44  |
| ★ Practice Test 4                      | _____ | 60  |
| ★ Practice Test 5                      | _____ | 75  |
| ★ Practice Test 6                      | _____ | 90  |
| ★ Practice Test 7                      | _____ | 104 |
| ★ Practice Test 8                      | _____ | 118 |
| ★ Practice Test 9                      | _____ | 132 |
| Practice Test Answer Keys              | _____ | 148 |
| Practice Test Answers and Explanations | _____ | 154 |

- 1) A contractor builds two walls. Wall 1 is  $(10x + 8)$  feet long. Wall 2 is  $(6x - 3)$  feet long. What is the total length?

☐ A.  $16x + 5$

☐ C.  $4x + 5$

☐ B.  $16x + 11$

☐ D.  $16x + 3$

- 2) In a spinning experiment, a spinner was spun 120 times. One section appeared 36 times. If the spinner is spun 360 more times (total 480 spins), and that same section appears 108 more times (total 144 appearances), what is the new experimental probability? Express as a fraction in simplest form.

**Tip Scenarios on \$60 Bill**

15% tip: \$9.00      18% tip: \$10.80

20% tip: \$12.00      25% tip: \$15.00

3)

If a diner leaves a 25% tip on a \$60 bill, what is the total amount paid?

☐ A. \$69

☐ C. \$75

☐ B. \$72

☐ D. \$85



Scan me!  
For more practice  
& answers

- 4) A garden bed is 8 meters long and 4 meters wide. If you scale all dimensions by a factor of  $\frac{1}{2}$ , what is the new length?

- 5) A marble bag contains 5 green, 3 purple, and 2 orange marbles. If drawing without replacement, which compound event is MOST likely?

- ☐ A. Green then purple                      ☐ C. Purple then purple  
☐ B. Orange then green                      ☐ D. Green then green

- 6) A circle has a diameter of 13.4 mm. What is its radius?

- ☐ A. 6.7 mm                      ☐ C. 20.1 mm  
☐ B. 13.4 mm                      ☐ D. 26.8 mm

- 7) Which probability best matches the phrase “even chance”?

- ☐ A. 0.2                      ☐ C. 0.8  
☐ B. 0.5                      ☐ D. 0.9

- 8) A savings account earns \$75 in interest from a principal of \$500 at an annual rate of 5%. How many years has the money been in the account?

- ☐ A. 1.5 years                      ☐ C. 2.5 years  
☐ B. 2 years                      ☐ D. 3 years



- 9) A blueprint scale is  $\frac{1}{4}$  inch to 1 meter. Two points on the blueprint are 3 inches apart. How far apart are they in meters?
- ☐ A. 3 meters ☐ C. 12 meters  
☐ B. 0.75 meters ☐ D. 1.33 meters
- 10) A water tank is 40% full. If the tank holds 250 liters, how many liters of water are in it?
- ☐ A. 80 liters ☐ C. 120 liters  
☐ B. 150 liters ☐ D. 100 liters
- 11) A store applies a markup of \$50 to an item costing \$200. What is the percent markup?
- ☐ A. 20% ☐ C. 10%  
☐ B. 50% ☐ D. 25%
- 12) Evaluate  $-13 + (-7)$ .
- ☐ A. -20 ☐ C. 6  
☐ B. -6 ☐ D. 20
- 13) A circle graph shows the distribution of pets owned by households in a neighborhood. Dogs account for 40% of the 80 households surveyed. How many households own dogs?
- ☐ A. 20 ☐ C. 48  
☐ B. 32 ☐ D. 64



Scan me!  
For more practice  
& answers

1)

| Original Price | Sale Price |
|----------------|------------|
| \$200          | \$150      |

What percent was the discount?

☐ A. 75%☐ C. 50%☐ B. 33%☐ D. 25%

2) A pool fills at a rate of  $\frac{5}{6}$  gallon in  $\frac{1}{3}$  minute. How many gallons per minute is this?

☐ A.  $\frac{5}{18}$  gal/min☐ C.  $\frac{18}{5}$  gal/min☐ B.  $\frac{1}{2}$  gal/min☐ D.  $\frac{5}{2}$  gal/min

3) A car travels at a constant speed. After 2 hours, it has gone 110 miles. After 5 hours, it has gone 275 miles. Is the distance proportional to time?

☐ A. Cannot determine☐ C. Only after 3 hours☐ B. No☐ D. Yes

4) A water pump fills a tank at a constant rate. The table shows the gallons of water ( $w$ ) pumped over time ( $t$ ) in minutes.

| Time (minutes) | Water (gallons) |
|----------------|-----------------|
| 2              | 16              |
| 4              | 32              |
| 6              | 48              |

What is the constant of proportionality?

☐ A. 4 gallons/min☐ C. 16 gallons/min☐ B. 6 gallons/min☐ D. 8 gallons/min

## Like Terms Table

| x terms       | y terms      |
|---------------|--------------|
| $3x, 5x, -2x$ | $4y, y, -3y$ |

5)

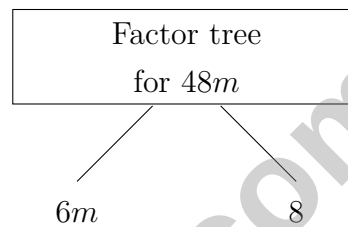
Which expression is equivalent to the combined like terms shown in the table?

☐ A.  $6x + 2y$

☐ C.  $-10xy$

☐ B.  $8x + 5y$

☐ D.  $10x + 2y$



6)

If a factor tree shows that  $48m = 6m \times 8$ , then what is the GCF of  $48m$  and 24?

☐ A. 6

☐ C. 24

☐ B. 8

☐ D. 12

7) A concert requires at least 200 ticket sales to break even. If 47 tickets have been sold, how many more are needed?

☐ A.  $47 + t \geq 200$

☐ C.  $t > 200$

☐ B.  $t \geq 153$

☐ D.  $t < 153$

8) A school cafeteria manager wants to know which vegetables students prefer. She surveys only students who buy lunch on a given day. What population is she actually *not* surveying?

☐ A. Students who eat no vegetables

☐ C. Students who buy lunch every day

☐ B. Students who bring lunch from home

☐ D. All students in the school


Scan me!  
For more practice  
& answers

+ -

63

× ÷

Testinar.com

1) If a circle graph has a sector of  $108^\circ$ , what percent does it represent?

☐ A. 30%

☐ C. 45%

☐ B. 33%

☐ D. 60%

2) For the inequality  $x - 4 \geq 3$ , which value is **not** a solution?

☐ A.  $x = 7$

☐ C.  $x = 6$

☐ B.  $x = 10$

☐ D.  $x = 100$

3) Estimate  $\sqrt{130}$  to the nearest whole number.

4) A model train is built using a scale of 1 : 120. If the model is 15 cm long, how long is the real train in meters?

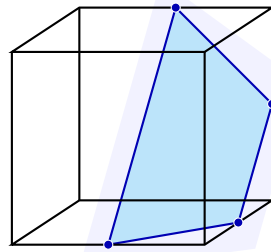
☐ A. 1.8 m

☐ C. 18 m

☐ B. 6 m

☐ D. 180 m





5)

A cube is sliced by a plane passing through the midpoints of four edges, forming a square cross-section. If the cube's edge is 6 cm, what is the side length of the square cross-section?

☐ A. 3 cm☐ B.  $3\sqrt{2}$  cm☐ C. 4.5 cm☐ D. 6 cm

Scan me!  
For more practice  
& answers

## Delaware 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 Delaware Smarter Balanced practice test.**

Testinar.com



## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.EE.1-7.EE.2) Add both walls:  $(10x + 8) + (6x - 3) = (10x + 6x) + (8 - 3) = 16x + 5$  feet.
- 2) **The correct answer is  $\frac{3}{10}$ .** (7.SP.6) Total:  $\frac{144}{480} = \frac{144}{480} = \frac{3}{10}$ . Both  $\frac{36}{120}$  and  $\frac{144}{480}$  simplify to  $\frac{3}{10}$ .
- 3) **Choice C is correct.** (7.RP.3) Tip:  $0.25 \times 60 = \$15$ . Total amount paid:  $60 + 15 = \$75$ .
- 4) **The correct answer is 4.** (7.RP.1-7.RP.3) New length =  $8 \times \frac{1}{2} = 4$  meters.
- 5) **Choice D is correct.** (7.SP.5-7.SP.8)  $P(\text{GG}) = \frac{5}{10} \cdot \frac{4}{9} = \frac{20}{90}$ .  $P(\text{GP}) = \frac{5}{10} \cdot \frac{3}{9} = \frac{15}{90}$ .  $P(\text{OG}) = \frac{2}{10} \cdot \frac{5}{9} = \frac{10}{90}$ .  $P(\text{PP}) = \frac{3}{10} \cdot \frac{2}{9} = \frac{6}{90}$ . Green-green is largest.
- 6) **Choice A is correct.** (7.G.4-7.G.6)  $r = \frac{d}{2} = \frac{13.4}{2} = 6.7$  mm.
- 7) **Choice B is correct.** (7.SP.5-7.SP.8) An even chance means equally likely to happen or not, which is  $P = 0.5 = 50\%$ .
- 8) **Choice D is correct.** (7.RP.3) Using  $I = Prt$ :  $75 = 500 \times 0.05 \times t \Rightarrow 75 = 25t \Rightarrow t = 3$ .
- 9) **Choice C is correct.** (7.RP.1-7.RP.3) If  $\frac{1}{4}$  inch = 1 meter, then 1 inch = 4 meters. So  $3 \times 4 = 12$  meters.
- 10) **Choice D is correct.** (7.RP.3) 40% of 250 is  $0.40 \times 250 = 100$  liters.
- 11) **Choice D is correct.** (7.RP.3) Percent markup =  $\frac{50}{200} \times 100 = 25\%$ .
- 12) **Choice A is correct.** (7.NS.1b) Both numbers are negative. Add their absolute values:  $|-13| + |-7| = 13 + 7 = 20$ . Since both are negative, the sum is  $-20$ .
- 13) **Choice B is correct.** (7.SP.1-7.SP.4) 40% of 80 =  $0.40 \times 80 = 32$  households.
- 14) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate =  $\frac{2/3}{1/5} = \frac{2}{3} \times 5 = \frac{10}{3}$  rooms per hour.
- 15) **Choice D is correct.** (7.RP.1-7.RP.3) All three points satisfy  $y = 2x$ :  $(0, 0) \rightarrow 0 = 2(0)$ ,  $(1, 2) \rightarrow 2 = 2(1)$ ,  $(2, 4) \rightarrow 4 = 2(2)$ . This line passes through origin with slope 2.
- 16) **Choice B is correct.** (7.NS.1-7.NS.3) New rate =  $200 + 15 - 8 + 12 = 219$  items/hour.
- 17) **Choice D is correct.** (7.NS.1-7.NS.3) Scientific notation requires the coefficient  $a$  to satisfy  $1 \leq a < 10$ . The value 10.1 exceeds the upper bound.
- 18) **Choice D is correct.** (7.EE.4a) This uses the distributive property form  $a(b - c)x$  to represent the cost per bundle times the number of bundles.
- 19) **Choice C is correct.** (7.G.1-7.G.5) Actual side length:  $2 \times 3 = 6$  m. Area:  $6 \times 6 = 36$  m<sup>2</sup>.
- 20) **Choice B is correct.** (7.G.1-7.G.5) Height of larger =  $5 \times 1.5 = 7.5$  in. Verify base:  $6 \times 1.5 = 9$  in ✓
- 21) **The correct answer is A,B.** (7.SP.1-7.SP.4) (A) True — back-to-back plots are designed to compare two datasets visually. (B) True — both datasets share a single stem column. (C) False — leaves in the left column point leftward. (D) False — datasets can have different ranges.
- 22) **Choice D is correct.** (7.RP.1-7.RP.3) The variables were reversed. Since  $a$  represents apples and  $p$  represents price, price should depend on apples:  $p = \frac{10}{4}a = 2.5a$ , not  $a = \frac{10}{4}p$ .
- 23) **Choice C is correct.** (7.RP.3) Find 55% of 200 using the proportion  $\frac{55}{100} = \frac{x}{200}$ . Cross-multiply:  $x = 110$ .
- 24) **Choice D is correct.** (7.RP.3) Total =  $\$500 + (6\% \times \$500) = \$500 + \$30 = \$530$ .
- 25) **Choice D is correct.** (7.NS.2) Negative times negative equals positive.  $-7 \times (-3) = 21$ .
- 26) **Choice B is correct.** (7.G.4-7.G.6) Rectangle:  $25 \times 16 = 400$  in<sup>2</sup>. Two triangles:  $2 \times \frac{1}{2} \times 5 \times 4 = 20$  in<sup>2</sup>. Remaining:  $400 - 20 = 380$  in<sup>2</sup>.
- 27) **Choice D is correct.** (7.RP.3) From the table, year 1 gives \$972 (below \$1,000) and year 2 gives \$1,049.76 (first to exceed \$1,000).
- 28) **Choice A is correct.** (7.RP.3) Net pay: Gross — taxes — deductions =  $2000 - 240 - 153 = \$1607$ .
- 29) **Choice B is correct.** (7.G.4-7.G.6)  $h = \frac{V}{B} = \frac{576}{72} = 8$  ft.
- 30) **Choice D is correct.** (7.RP.1-7.RP.3)  $k = 180/6 = 30$  widgets per hour.
- 31) **Choice D is correct.** (7.RP.3) Percent decrease =  $\frac{300000 - 255000}{300000} \times 100\% = \frac{45000}{300000} \times 100\% = 15\%$ .



## Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

### Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

**Grade 7 test-day tip:** When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Confidence Coach

# PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **9** 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:

**9** 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!



## VISIT [TESTINAR.COM/MATH7](https://www.testinar.com/math7)

FOR MORE PRACTICE TESTS AND LEARNING RESOURCES.



PRACTICE  
REGULARLY



STAY  
FOCUSED



SOLVE  
CONFIDENTLY



SUCCEED  
BRIGHTLY