

10 Delaware DeSSA

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



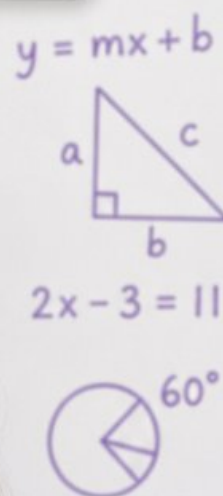
DETAILED ANSWER EXPLANATIONS

Learn with step-by-step
solutions



FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice



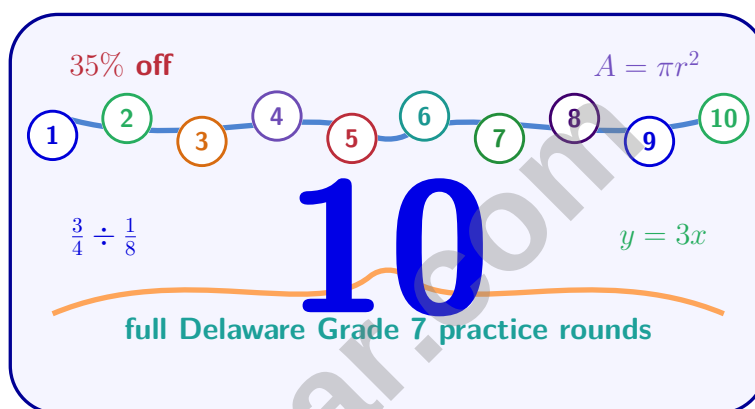
10 PRINTED TESTS
+2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 Delaware Smarter Balanced Grade 7 Math Practice Tests

Delaware Grade 7 Smarter Balanced Practice for compact, focused review of ratios, equations, geometry, statistics, probability, and reasoning



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, Delaware Grade 7 Problem Solver!

Ten focused rounds for sharper Delaware 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 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 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.

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?

Ten Delaware 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 Delaware 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

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- 1) A chef uses flour and sugar in a proportional recipe. The table shows the relationship.

Flour (cups)	Sugar (cups)
3	1
6	2
9	3

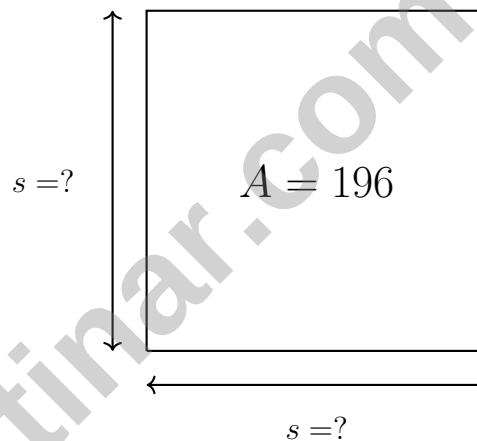
What is the constant of proportionality (sugar per flour)?

☐ A. 3

☐ C. $\frac{1}{2}$

☐ B. 1

☐ D. $\frac{1}{3}$



2)

What is the side length s of this square with area 196?

☐ A. 12

☐ C. 14

☐ B. 13

☐ D. 15



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- 3) A merry-go-round has radius 5 meters. A child rides on it and goes around 4 complete times. How far does the child travel? Use $\pi \approx 3.14$. Round to the nearest tenth.

- 4) A meal delivery service charges a subscription fee of \$35 and \$4.99 per meal. If the total monthly cost is \$84.85, which equation represents m , the number of meals?

☐ A. $35m + 4.99 = 84.85$

☐ C. $35(m + 4.99) = 84.85$

☐ B. $4.99 + 35m = 84.85$

☐ D. $4.99m + 35 = 84.85$

- 5) Two gyms track daily member visits. Gym X: visits = 45, 45, 46, 45, 44 (mean 45). Gym Y: visits = 30, 50, 40, 50, 35 (mean 41). Which gym has a lower MAD?

☐ A. Gym X (more consistent attendance)

☐ C. Both have equal MAD

☐ B. Gym Y (higher peak days)

☐ D. Cannot determine MAD from the means

- 6) A circle has an area of 314 m^2 . What is its radius? (Use $\pi \approx 3.14$.)

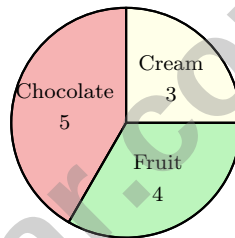


7) A line plot shows the number of goals scored by 15 soccer players this season:

Goals | 2 2 3 3 3 4 4 4 4 5 5 6 6 7 9

Which statement best describes the data?

- ☐ A. The data shows a uniform distribution with all scores equally common
- ☐ B. Most players scored between 3 and 5 goals, with one outlier at 9
- ☐ C. All players scored at least 2 goals, with the median at 4
- ☐ D. The mode is 4 goals, appearing 4 times



8)

A restaurant menu has 12 desserts: 5 chocolate, 4 fruit, and 3 cream-based. If you pick one at random, what is the probability of choosing a chocolate or cream-based dessert?

- ☐ A. $\frac{5}{12}$
- ☐ B. $\frac{8}{12}$
- ☐ C. $\frac{2}{3}$
- ☐ D. $\frac{1}{2}$

9) A cylindrical pipe has a volume of 565.2 cubic feet, a radius of 3 feet, and an unknown height. What is the height of the pipe? Use $\pi \approx 3.14$.



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1) A cylindrical coffee mug has a radius of 4 cm and a height of 12 cm. What is its surface area (including the top)? Use $\pi \approx 3.14$.

- ☐ A. 200.96 cm^2 ☐ C. 401.92 cm^2
☐ B. 301.44 cm^2 ☐ D. 502.56 cm^2

2) If raw data $\{23, 25, 28, 32, 35, 38, 41, 44, 47\}$ is displayed in a stem-and-leaf plot with stems 2, 3, 4, what is the interquartile range (IQR) if Q_1 is at the median of the lower half and Q_3 is at the median of the upper half?

- ☐ A. 11 ☐ C. 16
☐ B. 14 ☐ D. 24

3) A triangular prism has volume 126 cubic inches. If the triangular base has area 18 in^2 , what is the height of the prism?

- ☐ A. 7 in ☐ C. 9 in
☐ B. 8 in ☐ D. 144 in

4) Expand: $-6(2 - 3p)$

- ☐ A. $-12 + 18p$ ☐ C. $12 + 18p$
☐ B. $-12 - 18p$ ☐ D. $-12 - 3p$

5) Which expression is simplified?

- ☐ A. $3x + 2x - y$ ☐ C. $5x - y$
☐ B. $5x + 2x - y + y$ ☐ D. $2x + 3x + 4y$



6) What is the GCF of $6xy$ and $9y$?

☐ A. $3y$

☐ C. $9y$

☐ B. $6y$

☐ D. $3xy$

7) A triangular prism has a right triangular base with legs 6 m and 8 m (hypotenuse 10 m by Pythagorean theorem). The prism height is 9 m. What is the surface area?

☐ A. 48 m^2

☐ C. 264 m^2

☐ B. 144 m^2

☐ D. 288 m^2

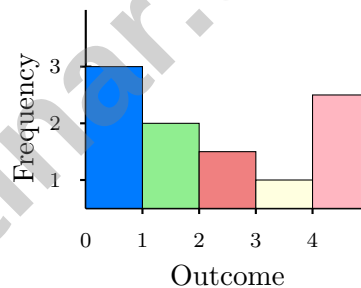
8) A percent can be converted to an angle in a circle graph. What angle corresponds to 25% of a circle?

☐ A. 45°

☐ C. 90°

☐ B. 60°

☐ D. 120°



9)

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



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- 1) A game has a $\frac{1}{3}$ chance of winning and a $\frac{2}{3}$ chance of losing. What is the probability of winning as a decimal (rounded to the nearest hundredth)?

☐ A. 0.33☐ C. 0.5☐ B. 0.67☐ D. 0.2

- 2) A circle graph shows nutrient breakdown in a vitamin tablet. If carbohydrates represent 144° of the circle, what percent is that?

☐ A. 30%☐ C. 50%☐ B. 40%☐ D. 60%

- 3) A fair coin is flipped 200 times in a simulation. The theoretical probability of getting heads is 0.5. Approximately how many times would you expect to see heads?

- 4) A rectangle's sides are $(x + 5)$ and $(3x - 2)$. What is the perimeter?

 $x + 5$  $3x - 2$ ☐ A. $8x + 6$ ☐ C. $8x + 3$ ☐ B. $4x + 3$ ☐ D. $8x - 6$ 

5) A student simplifies $\frac{y^8}{y^3}$ and gets y^{11} . What rule did they use incorrectly?

- ☐ A. They used the product rule instead of the quotient rule.
- ☐ B. They multiplied exponents instead of subtracting them.
- ☐ C. They forgot to simplify the coefficient.
- ☐ D. They changed the base incorrectly.

6) Find x : $-2x + 5 = 1$

- ☐ A. $x = -2$
- ☐ B. $x = 1$
- ☐ C. $x = 2$
- ☐ D. $x = 3$

7) Solve for x : $9(x + 2) = 63$

- ☐ A. $x = 3$
- ☐ B. $x = 5$
- ☐ C. $x = 7$
- ☐ D. $x = 9$

8) Solve: $\frac{1}{2}x + 3 = 8$

- ☐ A. $x = 5$
- ☐ B. $x = 8$
- ☐ C. $x = 10$
- ☐ D. $x = 16$

9) A scale drawing uses a scale of 5 mm : 1 cm. What is the scale factor?

- ☐ A. 0.5
- ☐ B. 1
- ☐ C. 2
- ☐ D. 5

10) A floor plan shows a rectangular office that is 2.5 inches by 3.5 inches at a scale of 1 in : 10 ft. Which pair of measurements are the actual office dimensions?

- ☐ A. 25 ft by 35 ft
- ☐ B. 2.5 ft by 3.5 ft
- ☐ C. 12.5 ft by 17.5 ft
- ☐ D. 20 ft by 28 ft



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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.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.RP.1-7.RP.3) $k = \text{sugar/flour} = 1/3$. Verify: $2/6 = 1/3$ and $3/9 = 1/3$.
- 2) **Choice C is correct.** (7.NS.1-7.NS.3) If area = 196, then $s^2 = 196$, so $s = \sqrt{196} = 14$.
- 3) **The correct answer is 125.6.** (7.G.4-7.G.6) Circumference = $2\pi r = 2 \times 3.14 \times 5 = 31.4$ m. Distance = $4 \times 31.4 = 125.6$ m.
- 4) **Choice D is correct.** (7.EE.4a) Subscription is \$35 plus \$4.99 per meal. Equation: $4.99m + 35 = 84.85$.
- 5) **Choice A is correct.** (7.SP.1-7.SP.4) Gym X: deviations = 0, 0, 1, 0, 1 (MAD ≈ 0.4). Gym Y: deviations = 11, 9, 1, 9, 6 (MAD ≈ 7.2). Gym X's tight cluster (44–46) vs. Gym Y's spread (30–50) shows Gym X is more consistent.
- 6) **The correct answer is 10.** (7.G.4-7.G.6) From $A = \pi r^2$: $314 = 3.14 \times r^2 \Rightarrow r^2 = 100 \Rightarrow r = 10$ m.
- 7) **Choice D is correct.** (7.SP.1-7.SP.4) Counting occurrences: 2 (twice), 3 (three times), 4 (four times), 5 (twice), 6 (twice), 7 (once), 9 (once). The value 4 appears most frequently, making it the mode.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Chocolate or cream-based: $5 + 3 = 8$. $P = \frac{8}{12} = \frac{2}{3}$.
- 9) **The correct answer is 20.** (7.G.4-7.G.6) $V = \pi r^2 h \Rightarrow 565.2 = 3.14 \times 9 \times h \Rightarrow 565.2 = 28.26h \Rightarrow h = 20$ feet.
- 10) **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.
- 11) **Choice A is correct.** (7.SP.3) Site X's IQR = $100 - 50 = 50$; Site Y's IQR = $110 - 40 = 70$. Smaller IQR indicates tighter middle-50% spread, so Site X is more consistent.
- 12) **Choice D is correct.** (7.SP.5-7.SP.8) Both same color: $\frac{5}{12} \cdot \frac{4}{11} + \frac{4}{12} \cdot \frac{3}{11} + \frac{3}{12} \cdot \frac{2}{11} = \frac{20}{132} + \frac{12}{132} + \frac{6}{132} = \frac{38}{132}$.
- 13) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{not like}) = 1 - \frac{7}{8} = \frac{1}{8}$. Expected: $\frac{1}{8} \times 80 = 10$.
- 14) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|550 - 625|}{625} \times 100\% = \frac{75}{625} \times 100\% = 12\%$.
- 15) **Choice A is correct.** (7.EE.1-7.EE.2) Expand: $6x + 12 + 2x - 6 = 8x + 6$. Combine like terms.
- 16) **Choice D is correct.** (7.RP.3) STEP 1: Convert 18 months to years: $t = 18 \div 12 = 1.5$ years. STEP 2: $I = 2500 \times 0.09 \times 1.5 = \337.50 .
- 17) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply map distance by scale: $4.5 \times 25 = 112.5$ miles.
- 18) **Choice C is correct.** (7.RP.3) $\frac{84}{300} = \frac{7}{25} = 0.28 = 28\%$.
- 19) **Choice D is correct.** (7.RP.3) Working backward: $107.10 \div 1.07 = \$100$ before tax. So discounted price was \$100, making discount = $120 - 100 = \$20$.
- 20) **The correct answer is B, C.** (7.G.1-7.G.5) Original scale 1:4 (1 in = 4 ft) to new scale 1:8 (1 in = 8 ft) doubles the real-world distance per inch. Scale factor ratio: $8 \div 4 = 2$, so drawing shrinks by $1 \div 2 = 0.5$. New dimensions: length $9 \times 0.5 = 4.5$ in, width $6 \times 0.5 = 3$ in. New area: $4.5 \times 3 = 13.5$ in². B and C are correct. A/D are distractors showing old dimensions.
- 21) **Choice C is correct.** (7.NS.1b) Net change = $48 + (-30) = 18$. There was a net gain of 18 customers.
- 22) **Choice D is correct.** (7.NS.1-7.NS.3) $-1 - (-5) = -1 + 5 = 4$. Move right 5 units from -1 on the number line.
- 23) **Choice A is correct.** (7.EE.1) Combine: $(11 - 6 + 2)a = 7a$.
- 24) **Choice A is correct.** (7.EE.1-7.EE.2) The GCF of 4 and 12 is 4. Factor out: $4c - 12d = 4(c - 3d)$.
- 25) **Choice B is correct.** (7.SP.5-7.SP.8) Theoretical: $\frac{200}{4} = 50$ each. Frequencies: 1 is 48 (dev 2), 2 is 52 (dev 2), 3 is 45 (dev 5), 4 is 55 (dev 5). Sections 2 and 4 are closest: $\frac{52}{200} = 0.26$ and $\frac{55}{200} = 0.275$.
- 26) **Choice A is correct.** (7.EE.4b) Set up: $-2 - d \leq -5$. Add 5: $3 - d \leq 0$, so $d \geq 3$.
- 27) **Choice D is correct.** (7.RP.3) Using the proportion $\frac{30}{100} = \frac{x}{120}$, cross-multiply: $30 \times 120 = 100x$, so $x = 36$ items.
- 28) **The correct answer is 8.5.** (7.SP.1-7.SP.4) The sample mean of 8.5 hours is used to estimate the population parameter. Since the sample is random and reasonably sized, this sample mean is a good estimate for the entire population.
- 29) **Choice C is correct.** (7.NS.1-7.NS.3) $\frac{5}{6} \div \frac{1}{6} = \frac{5}{6} \times \frac{6}{1} = 5$.
- 30) **Choice A is correct.** (7.NS.1-7.NS.3) A drop of 2.5°F is -2.5 . Over 4 hours: $4 \times (-2.5) = -10^\circ\text{F}$.



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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SUCCEED
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PRACTICE ★ REVIEW ★ SUCCEED