

3

Maine

Through Year
Assessment

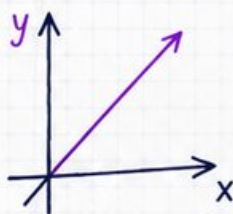
GRADE

7

MATH

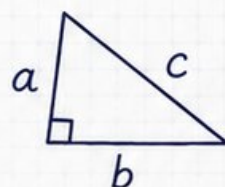
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

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



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

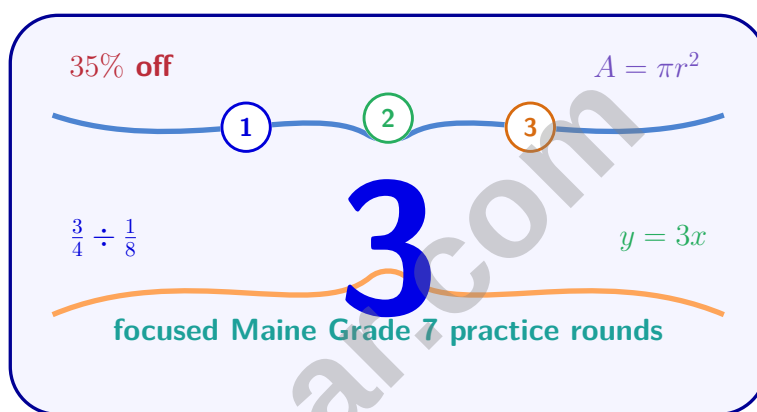
3 PRINTED
TESTS2 ONLINE
TESTS

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

Build
ConfidenceStrengthen
Math SkillsDetailed Answers
& ExplanationsImprove Test
Performance

3 Maine Through Year Assessment Grade 7 Math Practice Tests

Maine Math Review with Practice Tests and Explanations



Three complete 40-question Grade 7 Through Year Assessment 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, Maine Grade 7 Problem Solver!

Three focused rounds for sharper Through Year Assessment math thinking

This book gives you three full Grade 7 Through Year Assessment 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 Maine 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.

Maine 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 Through Year Assessment 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

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- 1) A composite figure is made of a rectangle (8 ft by 5 ft) with a square (3 ft by 3 ft) attached to one side. What is the total area?

- ☐ A. 40 ft²
☐ C. 49 ft²
☐ B. 45 ft²
☐ D. 56 ft²

- 2) Item Cost Estimates

Item	Estimated Cost	Actual Cost
Shirt	\$22	\$20

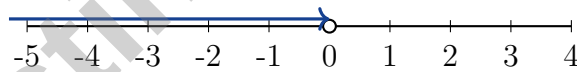
What is the percent error for the shirt cost estimate?

- ☐ A. 91%
☐ C. 11%
☐ B. 9.1%
☐ D. 10%

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

- ☐ A. $-20 + 5n$
☐ C. $20 + 5n$
☐ B. $-20 - 5n$
☐ D. $5n - 4$

- 4) What inequality is shown?



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

- 5) 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



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6) A book is marked down by 30% from its original price of \$25. What is the discount amount?

☐ A. \$22.50

☐ C. \$15

☐ B. \$17.50

☐ D. \$7.50

7) Using the simple interest formula $I = Prt$, how much interest does \$800 earn at an annual rate of 5% over 3 years?

☐ A. \$40

☐ C. \$125

☐ B. \$240

☐ D. \$120

Step 1: $4x + 3y + 2x - y$



Group x terms Group y terms

Step 2: $(4 + 2)x + (3 - 1)y$



Step 3: $6x + 2y$

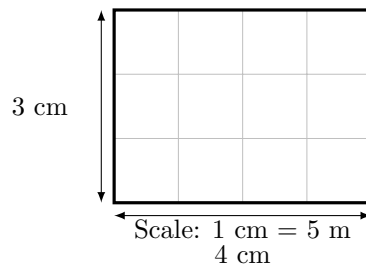
8)

Based on the steps shown, what is the error in this simplification?

- ☐ A. Step 3 has the wrong final answer. ☐ D. No error; the simplification is correct.
- ☐ B. Step 1 grouped terms incorrectly.
- ☐ C. Step 2 added the wrong coefficients.



Room Floor Plan (scale model)



9)

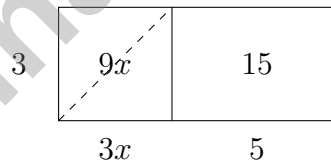
According to the scale, what are the actual dimensions of this rectangular room?

☐ A. $10 \text{ m} \times 20 \text{ m}$
☐ C. $12 \text{ m} \times 15 \text{ m}$
☐ B. $4 \text{ m} \times 3 \text{ m}$
☐ D. $20 \text{ m} \times 15 \text{ m}$

- 10) The temperature was -7°C in the morning. It rose by 15°C during the day. What was the temperature after the rise?

☐ A. -22°C
☐ C. 8°C
☐ B. -8°C
☐ D. 22°C

11)



The area model above represents the factorization of $9x + 15$. What is the common factor shown as the height?

☐ A. 3

☐ C. 9

☐ B. 5

☐ D. 15


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- 1) A quality inspector sampled 250 microchips and found 10 were faulty. The manufacturer produces 50000 chips per week. How many faulty chips are expected per week?
- ☐ A. 1000 ☐ C. 2000
☐ B. 1500 ☐ D. 2500
- 2) Solve for x : $2(x - 7) = 2x - 14$
- ☐ A. $x = 0$ only ☐ C. All real numbers
☐ B. $x = 7$ only ☐ D. No solution
- 3) A bank account starts with \$200. After 2 years earning 5% simple interest per year, how much interest is earned? Check that your answer is reasonable.
- ☐ A. \$10 ☐ C. \$25
☐ B. \$20 ☐ D. \$50
- 4) A model airplane has a scale of 1 in : 8 ft. The model is 12 inches long. How long is the actual airplane?
- ☐ A. 48 ft ☐ C. 96 ft
☐ B. 64 ft ☐ D. 108 ft
- 5) A rectangular parking lot measures 18 inches by 24 inches on a drawing at scale 1 in : 8 yd. What is the width of the actual parking lot?
- ☐ A. 18 yd ☐ C. 144 yd
☐ B. 24 yd ☐ D. 192 yd



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6) An angle is 18° more than its complement. What is the measure of the angle?

☐ A. 36°

☐ C. 54°

☐ B. 45°

☐ D. 108°

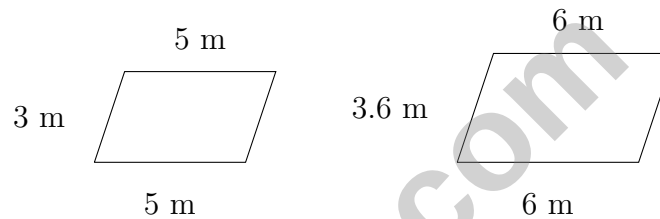
7) A shape has a vertex at $(2, 2)$. After a transformation, the vertex moves to $(-2, 2)$. Which of the following transformations could produce this result?

☐ A. Reflection over the y -axis

☐ C. Rotation of 180°

☐ B. Reflection over the x -axis

☐ D. Reflection over the line $y = x$



8)

These similar trapezoids have corresponding side lengths shown. Find the scale factor.

☐ A. $\frac{5}{6}$

☐ C. 1.5

☐ B. 1.2

☐ D. 1.8

9) A circular garden has a radius of 4 meters. The gardener wants to install a fence around the edge and cover the ground with mulch. Which measurement is needed for the mulch?

☐ A. Circumference

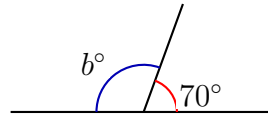
☐ C. Diameter

☐ B. Area

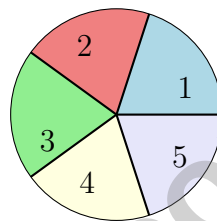
☐ D. Radius



1)



A ray splits a straight angle into two adjacent angles. One angle is 70° . Find the measure of angle b .

☐ A. 20° ☐ C. 110° ☐ B. 70° ☐ D. 180° 

2)

A spinner has five equal sectors numbered 1 through 5. What is $P(2 \text{ or } 4)$?

☐ A. $\frac{2}{10}$ ☐ C. $\frac{2}{5}$ ☐ B. $\frac{1}{5}$ ☐ D. $\frac{3}{5}$

3) A stock broker earns a 0.5% commission on all stock trades. A client makes a trade worth \$8,000. What is the broker's commission?

☐ A. \$4☐ C. \$400☐ B. \$4,000☐ D. \$40

4) A checking account has a monthly fee of \$10. If you maintain a minimum balance of \$1,000, the fee is waived. Carlos has \$850 in the account. How much more must he deposit to avoid the fee?

☐ A. \$100☐ C. \$200☐ B. \$250☐ D. \$150

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5) Tanya deposits \$800 in an account at 9% annual compound interest. What is the balance after 2 years?

☐ A. \$944.72

☐ C. \$952

☐ B. \$972

☐ D. \$950.48

6) A camera's price decreased by \$120, representing a 15% discount. What was the original price?

☐ A. \$1 200

☐ C. \$520

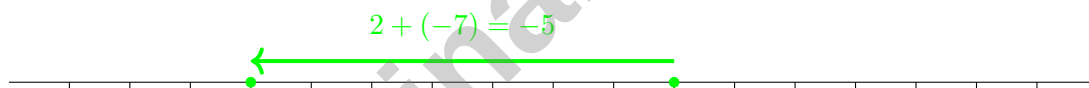
☐ B. \$720

☐ D. \$800

7) Identify which pair are NOT like terms.

☐ A. $6a^2$ and $9a^2$
☐ C. $-3y$ and $4y$
☐ B. $5x$ and $5x^2$
☐ D. $2mn$ and mn

8) Which addition problem results in a sum of -5 ?


☐ A. $8 + (-3)$
☐ C. $-1 + 6$
☐ B. $-9 + 3$
☐ D. $2 + (-7)$

9) Factor: $18ab + 27a$

☐ A. $9a(2b + 3)$
☐ C. $a(18b + 27)$
☐ B. $18(ab + 1.5a)$
☐ D. $3(6ab + 9a)$


Maine Through Year Assessment 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 Maine Through Year Assessment practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.G.4-7.G.6) Decompose into two shapes: Rectangle area = $8 \times 5 = 40 \text{ ft}^2$; square area = $3 \times 3 = 9 \text{ ft}^2$. Add the areas: $40 + 9 = 49 \text{ ft}^2$.
- 2) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|22-20|}{20} \times 100\% = \frac{2}{20} \times 100\% = 10\%$.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -5 : $-5(4) - 5(-n) = -20 + 5n$.
- 4) **Choice C is correct.** (7.EE.4b) An open circle at 0 with a left-pointing arrow indicates $x < 0$.
- 5) **Choice D is correct.** (7.RP.3) 40% of 250 is $0.40 \times 250 = 100$ liters.
- 6) **Choice D is correct.** (7.RP.3) Discount amount = $0.30 \times 25 = \$7.50$.
- 7) **Choice D is correct.** (7.RP.3) $I = Prt = 800 \times 0.05 \times 3 = \120 .
- 8) **Choice D is correct.** (7.EE.1) Step 1 correctly identifies the original expression. Step 2 correctly groups and adds: $(4 + 2) = 6$ and $(3 - 1) = 2$. Step 3 correctly shows the simplified form: $6x + 2y$.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) Using the scale 1 cm = 5 m: width is $4 \times 5 = 20$ m; height is $3 \times 5 = 15$ m.
- 10) **Choice C is correct.** (7.NS.1b) The temperature change is modeled by $-7 + 15 = 8$. A rise of 15° means we add 15 to the initial temperature of -7° .
- 11) **Choice A is correct.** (7.EE.1-7.EE.2) The rectangle has length $3x + 5$ and area $9x + 15$. Height must be 3, which is the GCF.
- 12) **Choice D is correct.** (7.G.4-7.G.6) Correct $SA = 2(63 + 18 + 14) = 190 \text{ cm}^2$. Missing one $9 \times 2 = 18 \text{ cm}^2$ face: incorrect $SA = 190 - 18 = 172 \text{ cm}^2$. Ratio: $\frac{172}{190} \approx 0.905 = 90.5\% \approx 91\%$.
- 13) **Choice B is correct.** (7.SP.5-7.SP.8) Each true/false question has 2 equally likely outcomes (like a coin). The compound event is three consecutive guesses, so three flips simulate this.
- 14) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point (1, 0.8) shows $k = 0.8$, so the equation is $y = 0.8x$.
- 15) **Choice A is correct.** (7.NS.1-7.NS.3) Net change = Final temp - Initial temp = $-2 - (-4) = -2 + 4 = 2^\circ\text{C}$.
- 16) **Choice A is correct.** (7.NS.1-7.NS.3) $10^9 = 1$ billion. So $5.8 \times 10^9 = 5.8$ billion.
- 17) **Choice A is correct.** (7.EE.1-7.EE.2) Substitute: $2(1) + 4(2) - 3(-1) = 2 + 8 + 3 = 13$.
- 18) **Choice B is correct.** (7.EE.3-7.EE.4) Set up: $8w + 15 = 63 \Rightarrow 8w = 48 \Rightarrow w = 6$.
- 19) **The correct answer is A,C.** (7.SP.1-7.SP.4) City A dark roast (42%) > City B dark roast (38%), so A is correct. City B light roast (40%) > City A light roast (35%), so C is correct. B is wrong (survey size not given). D is wrong (A: 23%, B: 22%).
- 20) **Choice C is correct.** (7.EE.4b) Check $x = 6$: $6 - 4 = 2 \not\geq 3$. The other values give 3, 6, and 96, all ≥ 3 .
- 21) **Choice B is correct.** (7.G.1-7.G.5) A horizontal plane parallel to the bases produces a circular cross-section with the same radius as the cylinder (3 cm). Area = $\pi r^2 = \pi(3)^2 = 9\pi \text{ cm}^2$.
- 22) **Choice B is correct.** (7.G.4-7.G.6) $C = 2\pi r \Rightarrow \frac{132}{7} = 2 \times \frac{22}{7} \times r \Rightarrow \frac{132}{7} = \frac{44}{7}r \Rightarrow r = \frac{132}{44} = 3$ m.
- 23) **Choice B is correct.** (7.G.4-7.G.6) $251.2 = 2(3.14)(4) + 2(3.14)(2)(h) \Rightarrow 251.2 = 25.12 + 12.56h \Rightarrow h = 10$ m.
- 24) **Choice B is correct.** (7.SP.1-7.SP.4) Phone directories only include people with listed landline numbers, which excludes people with unlisted numbers and younger voters who use only cell phones. This coverage bias makes the sample unrepresentative of all voters in the area.
- 25) **Choice B is correct.** (7.SP.1-7.SP.4) Range measures spread. Class A's range of 36 points (96–60) vs. Class B's range of 16 points (86–70) shows Class B's scores are tighter around the mean, indicating less variability and more consistency.
- 26) **Choice D is correct.** (7.SP.5-7.SP.8) Die outcomes: 6; letter outcomes: 5. Total: $6 \times 5 = 30$ outcomes.
- 27) **The correct answer is -17 .** (7.NS.1-7.NS.3) The new balance is $-5 - 12 = -17$. You now owe 17 dollars.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) The constant is $k = \frac{6}{3} = 2$. The equation is $y = 2x$.
- 29) **Choice C is correct.** (7.RP.3) Find 55% of 200 using the proportion $\frac{55}{100} = \frac{x}{200}$. Cross-multiply: $x = 110$.
- 30) **Choice D is correct.** (7.RP.3) The pattern increases by \$25 each month: Jan \$25, Feb \$50, Mar \$75, Apr \$100, May \$125.



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Hi, Strategy Solver!

◇ Grade 7 math rewards students who think before they calculate. You practiced choosing strategies, not just hunting for answers. This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** That matters because stronger math students do not use one method for every question. They notice the structure and choose the tool that fits. ★

Strategy Moves

- **Estimate:** Know the neighborhood of the answer.
- **Simplify:** Rewrite numbers in friendlier forms.
- **Model:** Draw what the words describe.
- **Verify:** Put the answer back into the problem.

Grade 7 test-day tip: Pause for ten seconds before hard questions. A short plan can save several minutes.

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

Jay Daie

Your Strategy Guide

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:

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2 Online Practice Tests

 Detailed Answers & Explanations



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Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

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Develop key math concepts and problem solving abilities.



Detailed Answers & Explanations

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



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Apply your knowledge and achieve your best score!

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- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



2 ONLINE TESTS

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2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

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