

10

Maine Through Year Assessment

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



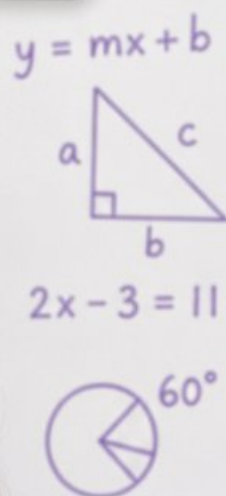
DETAILED ANSWER EXPLANATIONS

Learn with step-by-step
solutions



FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice



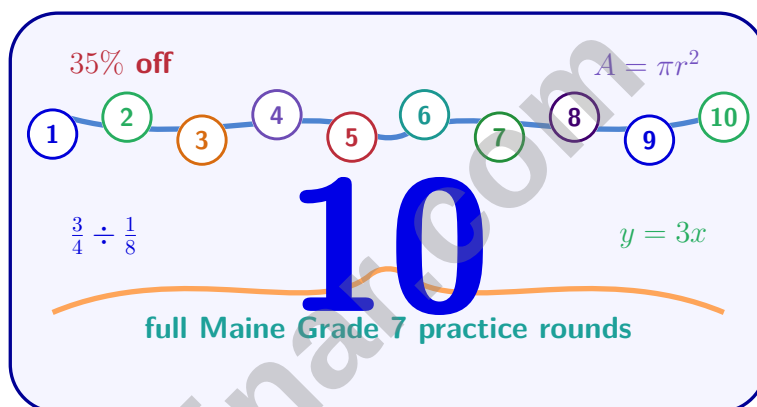
10 PRINTED TESTS
+2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 Maine Through Year Assessment Grade 7 Math Practice Tests

Maine Grade 7 Through Year Assessment Practice for lighthouse-clear review of ratios, percent reasoning, equations, geometry, inference, and probability



Ten 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!

Ten focused rounds for sharper Maine Through Year Assessment math thinking

This book gives you ten 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 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.

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?

Ten Maine Through Year Assessment 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 Maine 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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- 1) A teacher records reading test scores in a stem-and-leaf plot but forgets to order the leaves. The plot shows: Stem 8 with leaves 5, 2, 7, 2. What should the ordered leaves be?

☐ A. 5, 2, 7, 2☐ C. 2, 5, 7, 2☐ B. 2, 2, 5, 7☐ D. 7, 5, 2, 2

- 2) Simplify: 7^1

☐ A. 0☐ C. 7☐ B. 1☐ D. 49

- 3) A teacher surveys 50 randomly selected students from her school's population of 1200 students about their favorite subject. 18 students say math is their favorite. Estimate how many students in the entire school have math as their favorite subject.

- 4) Solve: $4x + 3 = 15$

☐ A. $x = 2$ ☐ C. $x = 4$ ☐ B. $x = 3$ ☐ D. $x = 6$

- 5) A phone plan costs \$50 per month. With a promotional 5% reduction, the cost becomes $50 - 0.05(50)$. Rewrite this in the form $50(?)$.

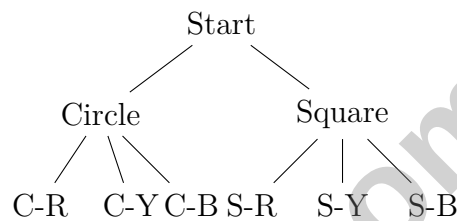
☐ A. $50(0.95)$ ☐ C. $50(1.05)$ ☐ B. $50(0.05)$ ☐ D. $50(1 - 0.05)$ 

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- 6) A box of cereal contains 24 collectible cards: 6 are baseball players, 9 are basketball players, and 9 are soccer players. If you draw one card at random, what is the probability of drawing a basketball or soccer player card?

- ☐ A. $\frac{1}{4}$ ☐ C. $\frac{3}{4}$
☐ B. $\frac{1}{2}$ ☐ D. $\frac{9}{24}$

- 7) A tree diagram shows all outcomes for selecting a shape (Circle or Square) and a color (Red, Yellow, or Blue). How many final branches should the tree have?



- ☐ A. 2 branches ☐ C. 5 branches
☐ B. 3 branches ☐ D. 6 branches
- 8) Consider the sample space for flipping a coin and rolling a die. How many total possible outcomes are there?
- ☐ A. 6 ☐ C. 12
☐ B. 8 ☐ D. 24
- 9) Two students tossed a coin. Student A tossed it 50 times and got heads 24 times. Student B tossed it 500 times and got heads 256 times. Which experimental probability is closer to the theoretical probability of 0.5?

- ☐ A. Student B (0.512) ☐ C. Both are equally close
☐ B. Cannot determine ☐ D. Student A (0.48)



10) Age Guessing Game

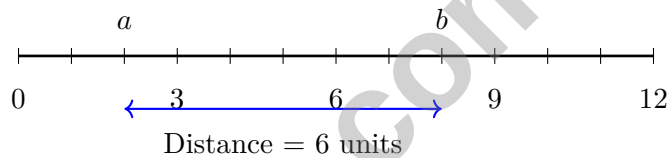
Person	Guessed Age	Actual Age
Aunt	52	60

What is the percent error for guessing Aunt's age?

- ☐ A. 8% ☐ C. 15.4%
☐ B. 92% ☐ D. 13.3%

11) Expand and simplify: $5(x - 2) + 3(x + 4)$

- ☐ A. $8x + 22$ ☐ C. $5x + 7$
☐ B. $8x + 12$ ☐ D. $8x + 2$



12)

If $a = 2$ and $b = 8$, the distance formula $|a - b|$ gives $|2 - 8| = 6$. What would the distance be if $a = -4$ and $b = 5$?

- ☐ A. -9 ☐ C. 9
☐ B. 1 ☐ D. -1

13) A blueprint has a scale of 1 inch : 8 feet. A room on the blueprint is 3 inches by 2.5 inches. What are the actual dimensions?

- ☐ A. 9 feet $\times$ 8 feet ☐ C. 11 feet $\times$ 10.5 feet
☐ B. 3 feet $\times$ 2.5 feet ☐ D. 24 feet $\times$ 20 feet



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1) Which simulation tool best models the probability of selecting a red marble or a blue marble from a bag with equal numbers of red and blue marbles?

- ☐ A. Rolling a standard die once
- ☐ B. Flipping a coin
- ☐ C. Spinning a spinner with 10 equal sections
- ☐ D. Drawing two cards from a deck without replacing the first

2) A rectangular piece of fabric ($25 \text{ inches} \times 16 \text{ inches}$) has two identical right triangles ($5 \text{ inches} \times 4 \text{ inches}$) removed from opposite corners. What is the remaining area?

- ☐ A. 360 in^2
- ☐ B. 380 in^2
- ☐ C. 400 in^2
- ☐ D. 420 in^2

3) Two rectangular prisms have the same base area of 25 cm^2 . The first has a height of 4 cm and the second has a height of 8 cm. By how much is the volume of the second greater than the first?

- ☐ A. 100 cm^3
- ☐ B. 75 cm^3
- ☐ C. 50 cm^3
- ☐ D. 25 cm^3

4) Identify which term is not a like term with $3x$.

- ☐ A. $7x$
- ☐ B. $-2x$
- ☐ C. x
- ☐ D. $3x^2$

5) A principal of \$1500 earns \$180 in simple interest at 6% annually. For how many years was the money invested?



- 6) A square pyramid has a base with side 4 in and slant height 5 in. What is the surface area?
- ☐ A. 16 in^2 ☐ C. 56 in^2
☐ B. 40 in^2 ☐ D. 96 in^2
- 7) A supermarket sold 1200 items during a sale. The circle graph shows 19% were on clearance. How many clearance items were sold?
- ☐ A. 19 ☐ C. 228
☐ B. 76 ☐ D. 972
- 8) Which expression represents “the product of a and b , increased by 10”?
- ☐ A. $a + b + 10$ ☐ C. $(a + b)(10)$
☐ B. $ab + 10$ ☐ D. $10ab$
- 9) Factor: $4c - 12d$
- ☐ A. $4(c - 3d)$ ☐ C. $12(c - d)$
☐ B. $2(2c - 6d)$ ☐ D. $c(4 - 12d)$
- 10) Use a chip model to represent $-4 + (-2)$. How many chips of each type remain?



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1) Which option shows a completely factored expression?

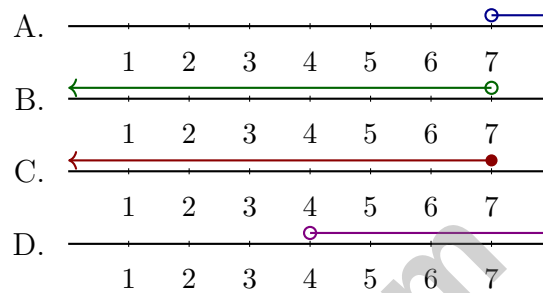
☐ A. $8x + 16 = 4(2x + 4)$

☐ C. $5m + 10 = 10(0.5m + 1)$

☐ B. $6y - 9 = 3(2y - 3)$

☐ D. $12p + 8 = 2(6p + 4)$

2) Solve the inequality $x - 3 < 4$ and identify which number line is correct.



3) Simplify: $2^4 \cdot 2^2$

☐ A. 2^2

☐ C. 2^8

☐ B. 2^6

☐ D. 4^4

4) A student writes an equation for: "A phone plan costs \$40 monthly plus \$0.10 per text over the limit. After texts, the bill was \$50." The student writes: $40 + 0.10t = 50$. How would you check if t is reasonable?

☐ A. Solve: $0.10t = 10$, so $t = 100$ texts.

☐ C. Solve: $40t = 10$, so $t = 0.25$ texts.

Verify: $40 + 0.10(100) = 50$. ✓

Verify: $40 + 0.10(0.25) = 50$. ✗

☐ B. Solve: $0.10t = 10$, so $t = 100$ texts.

☐ D. The equation cannot be checked

Verify: $40(100) + 0.10 = 50$. ✗

without more information.



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5) Find x : $2x + 1.5 = 5.5$

☐ A. $x = 1$

☐ C. $x = 3$

☐ B. $x = 2$

☐ D. $x = 4$

6) Solve for x : $3(x - 2) = x + 2$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 5$

7) A circle graph shows that 28% of a company's 700 employees work in sales. How many employees work in sales?

8) Two spinners are used to simulate rolling two dice. Each spinner has 6 equal sections numbered 1–6. If each spinner is spun once in a trial, how many different outcomes are in the sample space?

9) Solve: $2x + 8 = 24$

☐ A. $x = 6$

☐ C. $x = 10$

☐ B. $x = 8$

☐ D. $x = 12$



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 B is correct.** (7.SP.1-7.SP.4) Leaves must be arranged in ascending order. The values are 82, 82, 85, 87, so leaves in order are 2, 2, 5, 7.
- 2) **Choice C is correct.** (7.EE.1-7.EE.2) Any base to the first power equals itself: $7^1 = 7$.
- 3) **The correct answer is 432.** (7.SP.1-7.SP.4) The sample proportion is $\frac{18}{50}$. Use a proportion to estimate the population: $\frac{18}{50} = \frac{x}{1200}$. Cross-multiply: $50x = 21,600$, so $x = 432$ students. This estimate assumes the random sample is representative of all students.
- 4) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 3: $4x = 12$. Divide by 4: $x = 3$.
- 5) **Choice A is correct.** (7.EE.1-7.EE.2) $50 - 0.05(50) = 50(1 - 0.05) = 50(0.95)$. The factor 0.95 captures the scale: keeping 95% of the original.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) Basketball or soccer: $9 + 9 = 18$. $P = \frac{18}{24} = \frac{3}{4}$.
- 7) **Choice D is correct.** (7.SP.5-7.SP.8) Each of the 2 shapes branches into 3 color outcomes. Total: $2 \times 3 = 6$ final branches.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Coin outcomes: 2 (H, T); Die outcomes: 6. Total: $2 \times 6 = 12$.
- 9) **Choice A is correct.** (7.SP.6) Student A: $\frac{24}{50} = 0.48$, difference 0.02 from 0.5. Student B: $\frac{256}{500} = 0.512$, difference 0.012 from 0.5. This illustrates the law of large numbers—larger sample sizes yield results closer to theoretical probability.
- 10) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|52-60|}{60} \times 100\% = \frac{8}{60} \times 100\% \approx 13.3\%$.
- 11) **Choice D is correct.** (7.EE.1-7.EE.2) Expand: $5x - 10 + 3x + 12 = 8x + 2$. Combine like terms.
- 12) **Choice C is correct.** (7.NS.1-7.NS.3) Distance: $|-4 - 5| = |-9| = 9$. Distance is always positive (non-negative).
- 13) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply each dimension by the scale factor: $3 \times 8 = 24$ feet and $2.5 \times 8 = 20$ feet.
- 14) **Choice C is correct.** (7.RP.3) 35% of 400 is $0.35 \times 400 = 140$.
- 15) **Choice D is correct.** (7.RP.3) After discount: $480 \times 0.50 = \$240$. Tax: $0.055 \times 240 = \$13.20$. Final: $240 + 13.20 = \$253.20$.
- 16) **Choice D is correct.** (7.RP.3) $450 = 3000 \times r \times 3 \Rightarrow 450 = 9000r \Rightarrow r = 0.05 = 5\%$.
- 17) **Choice C is correct.** (7.NS.1b) Model descent as $800 + (-950) = -150$. The negative result means 150 feet below ground level.
- 18) **Choice A is correct.** (7.EE.1) Combine like terms: $(4p + 2p) + (6q - q) = 6p + 5q$.
- 19) **Choice A is correct.** (7.SP.1-7.SP.4) $75 \div 500 \times 100 = 0.15 \times 100 = 15\%$.
- 20) **The correct answer is A,B.** (7.G.4-7.G.6) A is correct: volume $V = B \times h$ for any prism. B is correct: $V = 4^3 = 64 \text{ cm}^3$. C is false: doubling height doubles volume, not triples it. D is false: a triangular prism can have larger volume than a rectangular prism depending on dimensions.
- 21) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $5(2) + 3(-1) - 2 = 10 - 3 - 2 = 5$.
- 22) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 15 and 35 is 5. Factor: $15x + 35 = 5(3x + 7)$.
- 23) **Choice B is correct.** (7.EE.4b) $x \geq -1$ includes -1 (filled circle) and all values greater than -1 (arrow right).
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point is $(1, 0.6)$, indicating \$0.60 per gallon.
- 25) **Choice B is correct.** (7.NS.1-7.NS.3) Subtraction can be rewritten as adding the opposite: $8 - 3 = 8 + (-3) = 5$.
- 26) **The correct answer is City M.** (7.SP.3) Range is a measure of spread. A smaller range indicates less variability and more predictable conditions, making planning easier. A larger range indicates high variability and unpredictability, even if the typical (median) temperature is the same.
- 27) **Choice D is correct.** (7.NS.1-7.NS.3) Negative divided by negative is positive. Calculate the magnitude: $36 \div 9 = 4$. Apply sign rule: $(-) \div (-) = (+)$. Thus $-36 \div (-9) = 4$.
- 28) **Choice D is correct.** (7.NS.2d) Divide $3 \div 4 = 0.75$. The denominator is 2^2 , which divides evenly.
- 29) **Choice B is correct.** (7.NS.1-7.NS.3) $-245 + 35 = -210$ meters.
- 30) **Choice A is correct.** (7.NS.1-7.NS.3) Depth = $-2.25 \times 8 = -18 \text{ m}$ (18 meters below sea level).



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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!

Don't lose it—your extra practice and success start here!



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REGULARLY



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FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY

PRACTICE ★ REVIEW ★ SUCCEED