

WISCONSIN

Forward Exam

GRADE 8 MATH

PRACTICE TESTS

5

PRINTED
TESTS



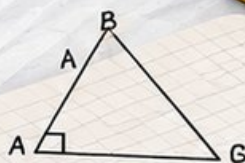
2

 ONLINE
TESTS

**Standards Aligned
Problem Solving For**
Comprehensive Assessment Programs



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



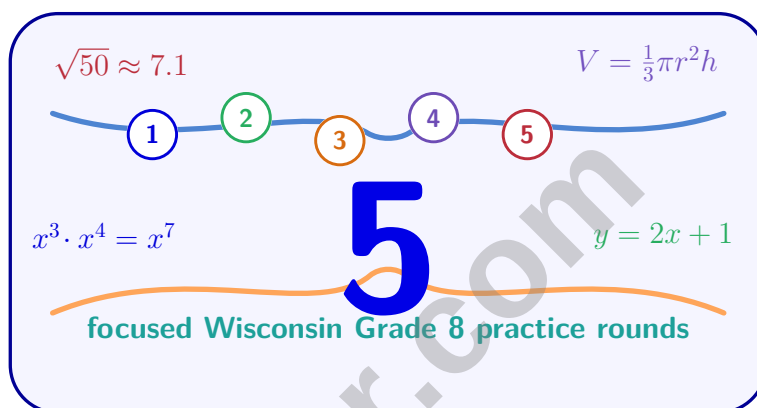
$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 Wisconsin Forward Exam Grade 8 Math Practice Tests

Practical Forward Exam Tests for Functions, Geometry, and Data



Five complete 40-question Grade 8 Forward Exam practice rounds with real numbers, exponents, scientific notation, equations, functions, transformations, geometry, data analysis, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Wisconsin Grade 8 Problem Solver!

Five focused rounds for sharper Forward Exam math thinking

This book gives you five full Grade 8 Forward Exam math practice tests. Each round is built to help you recognize structure, reason with real numbers and exponents, analyze linear relationships, connect equations with graphs, and explain your thinking with care.

Your Wisconsin 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 five-session plan for confident Grade 8 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 an exponent rule, equation, graph, transformation, diagram, 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.

Wisconsin 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?

Five Forward Exam tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.

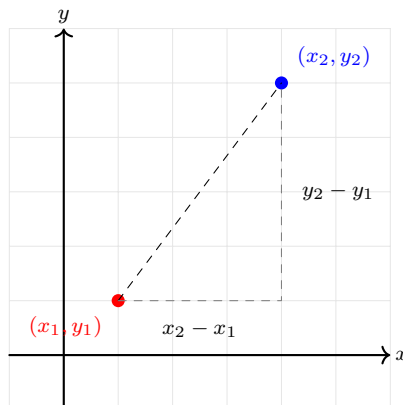


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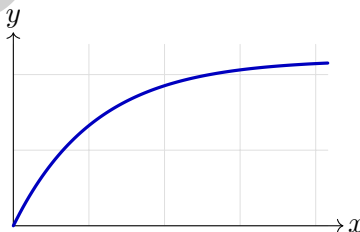
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- 1) Which of the following represents the distance formula between two points (x_1, y_1) and (x_2, y_2) ?



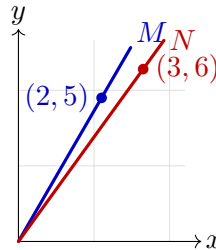
- ☐ A. $d = |x_2 - x_1| + |y_2 - y_1|$
☐ C. $d = (x_2 - x_1)^2 + (y_2 - y_1)^2$
☐ B. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
☐ D. $d = x_2 - x_1 + y_2 - y_1$
- 2) Which expression is equivalent to $3^2 \cdot 3^5$?
- ☐ A. 3^{10}
☐ C. 3^7
☐ B. 9^7
☐ D. 3^3
- 3) Which scenario matches a graph that rises steeply at first, then gradually?



- ☐ A. A balloon inflating at a constant rate
 ☐ C. A car accelerating then cruising at constant speed
☐ B. Compound interest earning accelerating returns
 ☐ D. Learning a new skill (fast gains, then slower progress)



- 4) Two lines are shown on the same graph. Line M passes through $(0, 0)$ and $(2, 5)$. Line N passes through $(0, 0)$ and $(3, 6)$. Which statement is true?



- ☐ A. Line M is steeper
- ☐ B. Line N is steeper
- ☐ C. Both lines have the same steepness
- ☐ D. Cannot be determined from the information
- 5) Solve the system $\begin{cases} 3x - 2y = 4 \\ x + 2y = 8 \end{cases}$ by elimination.

- 6) A restaurant has 50 tables. Small tables seat 2 people; large tables seat 4 people. To seat at least 160 people, how many large tables are needed at minimum?
- ☐ A. 20
- ☐ B. 25
- ☐ C. 30
- ☐ D. 35



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7) If $f(x) = \frac{2x+5}{3}$, what is $f(4)$?

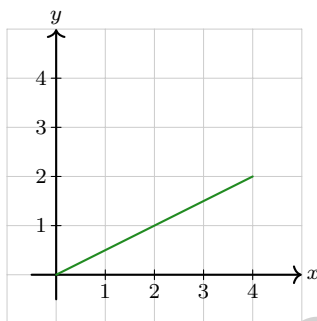
☐ A. 3

☐ B. 4

☐ C. $\frac{26}{3}$

☐ D. $\frac{13}{3}$

8) Which of the following graphs shows a LINEAR function?



☐ A. No, the slope is less than 1

☐ B. No, because the rate of change varies

☐ C. No, only if it passes through the origin

☐ D. Yes, the line is straight

9) The table shows a linear function. Find the missing y value.

x	1	2	3	4
y	7	11	?	19

☐ A. 13

☐ B. 15

☐ C. 14

☐ D. 16

10) A shape is reflected across a vertical line and then translated 5 units to the right. If the original shape has area 24 square units, what is the area of the final shape?

☐ A. 12 square units

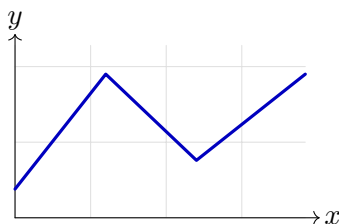
☐ B. 24 square units

☐ C. 48 square units

☐ D. 120 square units



- 1) A function exhibits error: a student says “The graph increases at all points.” But the actual graph increases, then decreases, then increases again. Which statement correctly identifies the student’s error?



- ☐ A. The student only looked at one part of the graph
☐ B. The graph is increasing everywhere
☐ C. The graph is decreasing everywhere
☐ D. The graph is constant everywhere
- 2) Using the quotient rule, explain why $x^0 = 1$ (for $x \neq 0$).

Step 1	Step 2	Step 3
$\frac{x^5}{x^5}$	$= x^{5-5}$	$= x^0 = ?$

Since $\frac{x^5}{x^5} = 1$, what must x^0 equal?

- ☐ A. Because the exponent is 0, so the result is 0.
☐ B. Because the quotient rule says so.
☐ C. Because when exponents are equal, the quotient is 0.
☐ D. 1 (any nonzero number divided by itself equals 1)
- 3) Comparison of graphs: Line A passes through origin with slope 2. Line B crosses y -axis at -3 with slope 1. At $x = 4$, which is higher?

- ☐ A. Line A
☐ B. Line B
☐ C. Both equal
☐ D. Cannot determine



- 4) A cell phone plan costs \$20 per month plus \$0.10 per text message. If cost is graphed against number of texts sent (x-axis texts, y-axis cost in \$), what is the slope?
- ☐ A. \$20 per text ☐ C. 20 texts per dollar
☐ B. \$20.10 per text ☐ D. \$0.10 per text
- 5) To find the number of \$0.50 postage stamps and \$0.37 postage stamps that total \$3.74 with 10 stamps, which approach is best?
- ☐ A. Guess and check ☐ C. Solving a system of equations
☐ B. Proportional reasoning ☐ D. Trial by tables
- 6) If $h(x) = -x + 4$, what is $h(1)$?
- ☐ A. 3 ☐ C. -3
☐ B. 5 ☐ D. 4
- 7) Which ordered pair is a solution to both equations?
- $y = -2x + 5$
 - $3x + y = 6$
- ☐ A. (1, 3) ☐ C. (0, 4)
☐ B. (2, 1) ☐ D. (-1, 7)
- 8) Factor $x^2 - 2x - 15$.
- ☐ A. $(x - 5)(x + 3)$ ☐ C. $(x - 15)(x + 1)$
☐ B. $(x + 5)(x - 3)$ ☐ D. $(x - 1)(x - 15)$



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1) Which statement about the square roots of perfect squares is true?

- ☐ A. They cannot be classified as rational
☐ B. They are always irrational
☐ C. They never equal an integer
☐ D. They can always be written as whole numbers

2) What is $\sqrt[3]{64}$?

- ☐ A. 3
☐ B. 6
☐ C. 5
☐ D. 4

3) Solve: $x^7 \cdot x^4 = x^9$.

- ☐ A. 13
☐ B. 36
☐ C. 5
☐ D. $\frac{9}{4}$

4) An athlete drinks 8 ounces of water for every 10 minutes of exercise. After 45 minutes of exercise, how many ounces has the athlete drunk?

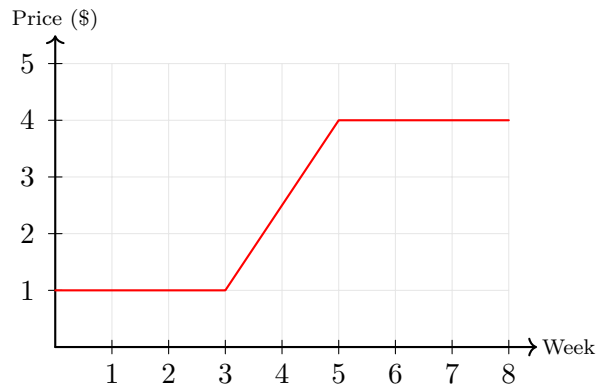
- ☐ A. 30 ounces
☐ B. 45 ounces
☐ C. 40 ounces
☐ D. 36 ounces

5) Function $A(t) = 60t$ (mph). Function B passes through $(0, 1)$ and $(5, 5)$ (on distance-time graph, with t in hours). Which travels faster?



- ☐ A. Function A
☐ B. Function B
☐ C. Both same speed.
☐ D. Cannot be determined.





6)

An item's price over 8 weeks is shown. During which week does the price increase the fastest?

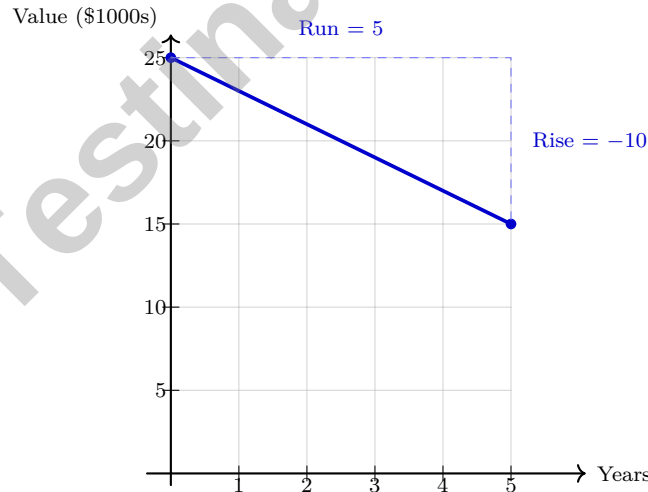
☐ A. Weeks 1-3

☐ C. Weeks 3-5

☐ B. Week 3

☐ D. Weeks 5-8

7) A graph shows the value of a car (in \$1000s) depreciating over years. The line passes through (0, 25) and (5, 15).


☐ A. -\$2000 per year

☐ C. \$2000 per year

☐ B. -\$1000 per year

☐ D. 5 years per \$1000


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Wisconsin Forward Exam Grade 8 Practice Test Answer Keys

How to use this section with a Grade 8 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 Wisconsin Forward Exam practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (M.8.G.B.8) The distance formula comes from the Pythagorean Theorem applied to the horizontal and vertical legs of a right triangle.
- 2) **Choice C is correct.** (M.8.EE.A.1) When multiplying powers with the same base, add exponents: $3^2 \cdot 3^5 = 3^{2+5} = 3^7$.
- 3) **Choice D is correct.** (M.8.F.B.5) Option D shows increasing returns that diminish: steep early growth then gradual improvement. A is constant, B accelerates, C has a flat section.
- 4) **Choice A is correct.** (M.8.EE.C.8) Line M : slope = $\frac{5}{2} = 2.5$. Line N : slope = $\frac{6}{3} = 2$. Since $2.5 > 2$, line M is steeper.
- 5) **The correct answer is $(3, \frac{5}{2})$.** (M.8.EE.C.8a) Add the equations to eliminate y : $(3x - 2y) + (x + 2y) = 4 + 8$, so $4x = 12$, giving $x = 3$. Substitute: $3 + 2y = 8$, so $2y = 5$ and $y = \frac{5}{2}$.
- 6) **Choice C is correct.** (M.8.EE.C.8c) Let l = large tables, so $50 - l$ tables are small. The seating capacity is $4l + 2(50 - l) = 100 + 2l$. Solve $100 + 2l \geq 160$, giving $2l \geq 60$ and $l \geq 30$.
- 7) **Choice D is correct.** (M.8.F.A.2) Substitute $x = 4$: $f(4) = \frac{2(4)+5}{3} = \frac{8+5}{3} = \frac{13}{3}$.
- 8) **Choice D is correct.** (M.8.F.A.3) A straight line indicates a linear function, regardless of slope or intercept. This graph clearly shows a straight line.
- 9) **Choice B is correct.** (M.8.F.B.4) Slope is $\frac{11-7}{2-1} = 4$. When $x = 3$: $y = 11 + 4 = 15$.
- 10) **Choice B is correct.** (M.8.G.A.2) Both reflection and translation are rigid motions that preserve area. The final shape is congruent to the original, so it has the same area: 24 square units.
- 11) **Choice B is correct.** (M.8.G.A.3) When dilated by scale factor k , area is multiplied by k^2 . Here: $10 \times 3^2 = 10 \times 9 = 90$.
- 12) **Choice B is correct.** (M.8.G.A.5) When parallel lines are cut by a transversal, corresponding angles, alternate interior angles, and alternate exterior angles are all congruent.
- 13) **Choice A is correct.** (M.8.G.B.8, M.8.G.B.7) From $(\sqrt{18})^2 + (\sqrt{7})^2 = c^2$, we get $18 + 7 = 25$, so $c = \sqrt{25} = 5$.
- 14) **Choice B is correct.** (M.8.G.C.9) $V = \frac{1}{3} \times 16 \times 3 = 16 \text{ m}^3$.
- 15) **Choice B is correct.** (M.8.G.B.7) Rectangle = $12 \times 6 = 72 \text{ ft}^2$. Each isosceles right triangle = $\frac{1}{2} \times 6 \times 6 = 18 \text{ ft}^2$. Two triangles = 36 ft^2 . Total = $72 + 36 = 108 \text{ ft}^2$.
- 16) **The correct answer is 20.** (M.8.EE.C.7) Compute $9(2)^2 - 16 = 36 - 16 = 20$.
- 17) **Choice B is correct.** (M.8.G.A.5) Using $(n - 2) \times 180 = 540$, we get $n - 2 = 3$, so $n = 5$ (a pentagon).
- 18) **The correct answer is A,D.** (M.8.EE.B.5) The line goes through $(0, 0)$ and $(8, 4)$, so the slope and constant of proportionality are $\frac{4}{8} = 0.5$. A point on the line must have $y = 0.5x$; when $x = 6$, $y = 3$, so $(6, 3)$ is on the line.
- 19) **Choice C is correct.** (M.8.SP.A.1) Clear linearity with points close to the line of best fit indicates strong correlation. The downward trend makes it negative.
- 20) **Choice C is correct.** (M.8.SP.A.4) Joint relative frequency divides the cell count (240) by the grand total (480) = 0.50. Options A and B are conditional frequencies; D is a marginal.
- 21) **Choice C is correct.** (M.8.G.B.8) Absolute deviations: $|88 - 90| = 2$, $|92 - 90| = 2$, $|90 - 90| = 0$, $|86 - 90| = 4$, $|94 - 90| = 4$. Sum = 12. MAD = $12/5 = 2.4$.
- 22) **Choice A is correct.** (M.8.G.B.7) $P(\text{black first}) = \frac{6}{10}$; $P(\text{black second} \mid \text{black first}) = \frac{5}{9}$. Product: $\frac{6}{10} \times \frac{5}{9} = \frac{30}{90} = \frac{1}{3}$.
- 23) **Choice B is correct.** (M.8.EE.C.7b) Position 1: 8 choices. Position 2: 7 remaining. Position 3: 6 remaining. Total: $8 \times 7 \times 6 = 336$. (This is $P(8, 3) = \frac{8!}{5!}$)
- 24) **Choice C is correct.** (M.8.G.B.7) Let the smaller angle be x . Then $x + (x + 12) = 90 \Rightarrow 2x + 12 = 90 \Rightarrow 2x = 78 \Rightarrow x = 39^\circ$. The larger angle is $39 + 12 = 51^\circ$.
- 25) **Choice D is correct.** (M.8.SP.A.2) When sketching trend lines by hand, slight differences in slope are natural and acceptable, as long as both lines reasonably balance data on both sides and follow the overall trend.
- 26) **Choice A is correct.** (M.8.G.A.4) If the new length is 12 and the scale factor is 1.5, then original = $\frac{12}{1.5} = 8 \text{ cm}$. Distractor D adds the scale factor instead of dividing.



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Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 5 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 full-length Grade 8 Math** practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!



WHAT'S INSIDE?



Standards-Aligned Practice

Questions designed to cover essential Grade 8 math standards.



Variety of Question Types

Multiple-choice, short answer, and more to build well-rounded skills.



Real-World Applications

Engaging problems that connect math to everyday life.



Step-by-Step Progress

Track improvement and build confidence with every test.

COVERS ALL ESSENTIAL TOPICS

- | | |
|---------------------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Pythagorean Theorem |
| ✓ Ratios & Proportional Relationships | ✓ Volume & Surface Area |
| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| ✓ Measurement & Data | ✓ And More! |

5
PRINTED
TESTS



2 ONLINE
TESTS



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