

Wisconsin

Forward Exam

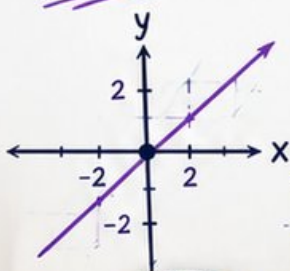
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

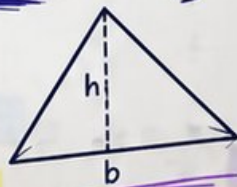
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



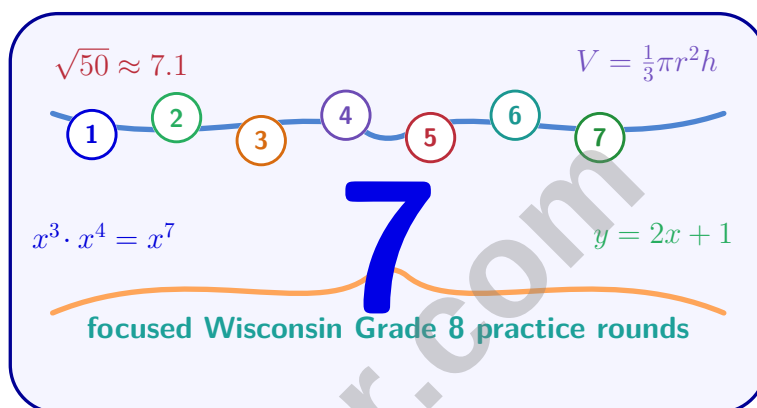
2 ONLINE
TESTS



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

7 Wisconsin Forward Exam Grade 8 Math Practice Tests

Focused Grade 8 Forward Exam Tests for Review, Readiness, and Growth



Seven 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!

Seven focused rounds for sharper Forward Exam math thinking

This book gives you seven 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 seven-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?

Seven Forward Exam tests, 280 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real and irrational numbers, integer exponents, scientific notation, equations, and careful reading.
Tests 4–6	Slope, systems of equations, functions, inequalities, transformations, congruence, and similarity.
Test 7	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
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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& answers

Table of Contents

★ Practice Test 1	_____	13
★ Practice Test 2	_____	31
★ Practice Test 3	_____	45
★ Practice Test 4	_____	62
★ Practice Test 5	_____	78
★ Practice Test 6	_____	95
★ Practice Test 7	_____	112
Practice Test Answer Keys	_____	126
Practice Test Answers and Explanations	_____	131

- 1) A table of values for a linear relationship is partially filled:

x	2	5	8
y	3	?	15

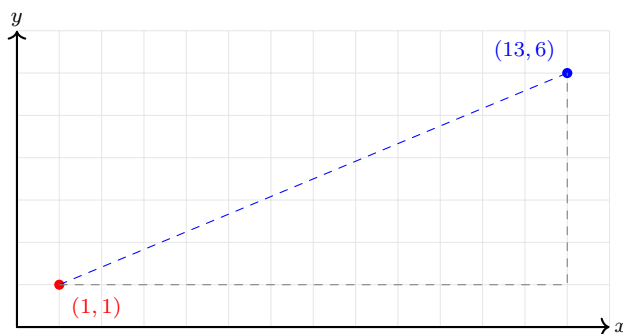
What is the missing y -value?

- ☐ A. 8 ☐ C. 10
- ☐ B. 12 ☐ D. 9
- 2) Which scenario represents a relation that is NOT a function?
- ☐ A. A car's speed and time (one time, one speed). ☐ C. A product's barcode and all price changes (one barcode, many prices over time).
- ☐ B. A student's name and age (one person, one age). ☐ D. A city and its mayor (one city, one mayor).
- 3) Polygon ABCD is translated 4 units left and 3 units down to form polygon A'B'C'D'. If angle A measures 85° , what is the measure of angle A'?
- ☐ A. 42.5° ☐ C. 85°
- ☐ B. 75° ☐ D. 95°



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4) What is the distance between $(1, 1)$ and $(13, 6)$?



- ☐ A. 7
☐ B. 17

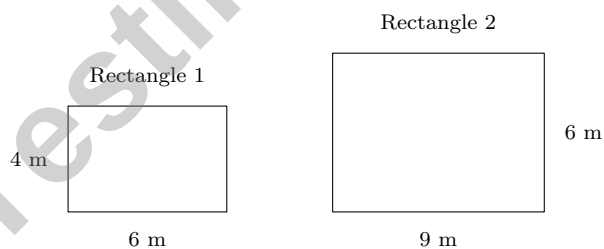
- ☐ C. 13
☐ D. $\sqrt{119}$

5) A regular polygon has an interior angle of 162° . How many sides does it have?

- ☐ A. 18
☐ B. 20

- ☐ C. 22
☐ D. 25

6) Two rectangles are shown with proportional dimensions. Which similarity statement is correct?



- ☐ A. Rectangle 1 $\sim$ Rectangle 2 with scale factor 1.5
☐ B. The rectangles are not similar
☐ C. Rectangle 1 $\sim$ Rectangle 2 with scale factor 0.5
☐ D. They are congruent



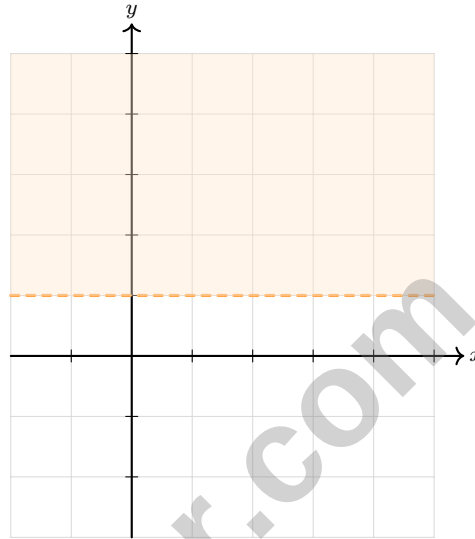
7) Expand $(x - 3)^2$.

☐ A. $x^2 - 6x + 9$

☐ B. $x^2 - 9$

☐ C. $x^2 + 6x + 9$

☐ D. $x^2 - 6x - 9$



8)

The graph shows a dashed horizontal line and shading above. The inequality is:

☐ A. $y > 1$

☐ B. $y < 1$

☐ C. $y \geq 1$

☐ D. $y \leq 1$

9) A square pyramid and a cube have the same square base (side 6 cm). The pyramid's height equals the cube's side length (6 cm). What is the ratio of the pyramid's volume to the cube's volume?

☐ A. 1 : 1

☐ B. 1 : 2

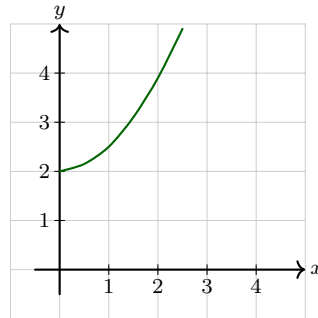
☐ C. 1 : 3

☐ D. 1 : 6



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1) Which graph shows a NONLINEAR function?



- ☐ A. No, it passes through $(0, 2)$
☐ C. No, the relationship is still linear overall
- ☐ B. Yes, the curve increases at an accelerating rate
- ☐ D. Yes, but only if $y > x$
- 2) Which line is perpendicular to $y = \frac{1}{2}x - 3$?
- ☐ A. $y = \frac{1}{2}x + 4$
☐ C. $y = -2x + 5$
- ☐ B. $y = 2x + 1$
☐ D. $y = -\frac{1}{2}x - 2$
- 3) Solve for x : $\frac{x}{4} - 2 = 3$
- ☐ A. $x = 4$
☐ C. $x = 12$
- ☐ B. $x = 8$
☐ D. $x = 20$
- 4) What is $(5 \times 10^7) \times (4 \times 10^3)$?
- ☐ A. 2×10^{10}
☐ C. 9×10^{10}
- ☐ B. 20×10^4
☐ D. 2×10^{11}

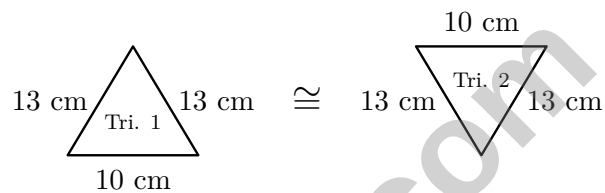


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5) Which relation is a function?

- ☐ A. A student and the clubs they joined (a student may join more than one club).
- ☐ B. A book title and its author (a book has multiple authors).
- ☐ C. A person and the phone numbers they use (a person may use more than one phone number).
- ☐ D. A country and its capital (one country, one capital).

6) Two congruent isosceles triangles have equal bases but different orientations. Triangle 1 has base 10 cm and equal sides of 13 cm. What is the perimeter of Triangle 2?



- ☐ A. 26 cm
- ☐ B. 20 cm
- ☐ C. 36 cm
- ☐ D. 52 cm



1) If $n(x) = \begin{cases} x + 2 & \text{if } x < 1 \\ 5 & \text{if } 1 \leq x < 4, \\ x - 1 & \text{if } x \geq 4 \end{cases}$ what is $n(2)$?

☐ A. 4

☐ C. 3

☐ B. 5

☐ D. 1

- 2) Among high-quality products in the table below, what relative frequency are premium-priced?

	Premium	Standard	Total
High Quality	240	80	320
Low Quality	48	112	160
Total	288	192	480

☐ A. $\frac{240}{480} = 0.50$

☐ C. $\frac{240}{320} = 0.75$

☐ B. $\frac{240}{288} \approx 0.83$

☐ D. $\frac{240}{480} = 0.60$

3)

Sales	\$100	\$150	\$200	\$250	\$300
-------	-------	-------	-------	-------	-------

Five days of sales shown. Mean = \$200. What is the MAD?

☐ A. \$40

☐ C. \$60

☐ B. \$50

☐ D. \$75

- 4) A right triangle has legs of 9 units and 40 units. What is the length of the hypotenuse?



- 5) Two lines intersect. One angle is 82° . What is the measure of an adjacent angle?

- 6) Which pair of equations represents lines with the same slope but different y -intercepts?

- ☐ A. $y = 3x + 2$ and $y = 2x + 3$ ☐ C. $y = 4x + 1$ and $y = 4x + 1$
☐ B. $y = -2x + 5$ and $y = -2x - 3$ ☐ D. $y = x + 5$ and $y = 2x + 5$

- 7) Which of the following numbers is irrational?

- ☐ A. $\frac{3}{5}$ ☐ C. $\sqrt{7}$
☐ B. $0.\overline{6}$ ☐ D. $\sqrt{25}$

- 8) A path forms a rectangular frame: outer 25 m by 15 m, inner 20 m by 10 m. What is the area of the path only, in m^2 ?

- 9) Which equals $0.\overline{54}$?

- ☐ A. $\frac{54}{100}$ ☐ C. $\frac{54}{90}$
☐ B. $\frac{27}{50}$ ☐ D. $\frac{54}{99} = \frac{6}{11}$



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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 D is correct.** (M.8.EE.C.8) Slope from (2, 3) to (8, 15) is $\frac{15-3}{8-2} = \frac{12}{6} = 2$. At $x = 5$: $y = 3 + 2(5-2) = 3 + 6 = 9$.
- 2) **Choice C is correct.** (M.8.F.A.1) Each barcode corresponds to a product, but the price can change multiple times, giving the barcode multiple price outputs. The other options satisfy the one-input-one-output rule.
- 3) **Choice C is correct.** (M.8.G.A.2) Translation is a rigid motion that preserves all angles. Since polygon A'B'C'D' is congruent to ABCD, angle A' = angle A = 85° .
- 4) **Choice C is correct.** (M.8.G.B.8) $d = \sqrt{(13-1)^2 + (6-1)^2} = \sqrt{12^2 + 5^2} = \sqrt{144 + 25} = \sqrt{169} = 13$. (This is a 5-12-13 Pythagorean triple.)
- 5) **Choice B is correct.** (M.8.G.A.5) Using $\frac{(n-2) \times 180}{n} = 162$: $(n-2) \times 180 = 162n \Rightarrow 180n - 360 = 162n \Rightarrow 18n = 360 \Rightarrow n = 20$.
- 6) **Choice A is correct.** (M.8.G.A.4) Ratio of corresponding sides: $\frac{9}{6} = 1.5$ and $\frac{6}{4} = 1.5$. Constant ratio confirms similarity.
- 7) **Choice A is correct.** (M.8.EE.C.7) $(x-3)^2 = (x-3)(x-3) = x^2 - 3x - 3x + 9 = x^2 - 6x + 9$.
- 8) **Choice A is correct.** (M.8.EE.C.8b) Dashed horizontal line at $y = 1$ with shading ABOVE (in the positive y direction) means $y > 1$.
- 9) **Choice C is correct.** (M.8.G.C.9) Pyramid: $V_{py} = \frac{1}{3} \times 36 \times 6 = 72 \text{ cm}^3$. Cube: $V_c = 6^3 = 216 \text{ cm}^3$. Ratio: $\frac{72}{216} = 1 : 3$.
- 10) **Choice D is correct.** (M.8.G.B.7) Total: 20 books. Hardcover fiction: 8. $P = \frac{8}{20} \times \frac{7}{19} = \frac{56}{380} = \frac{14}{95}$.
- 11) **Choice B is correct.** (M.8.EE.C.7b) Each position is independent: $26 \times 10 \times 26 \times 10 = 26^2 \times 10^2 = 676,000$.
- 12) **Choice C is correct.** (M.8.EE.C.8a) The graph shows only one line drawn (or the same line twice). When both equations represent the same line, every point on the line is a solution, giving infinitely many solutions.
- 13) **Choice B is correct.** (M.8.F.A.3) Only $y = -12x - 1$ is in the form $y = mx + b$ with $m = -12$ and $b = -1$. The others involve squares, square roots, and reciprocals.
- 14) **Choice A is correct.** (M.8.F.B.4) Area is length times width. The width is fixed at 5, so $A = \ell \cdot 5 = 5\ell$.
- 15) **The correct answer is 4.8×10^4 .** (M.8.EE.C.7b) Same exponents: $(8.5 - 3.7) \times 10^4 = 4.8 \times 10^4$.
- 16) **Choice A is correct.** (M.8.G.A.3) Under 90° counterclockwise rotation, $(x, y) \rightarrow (-y, x)$. So $(2, 1) \rightarrow (-1, 2)$.
- 17) **The correct answer is 9.** (M.8.EE.C.7b) Let b be the brother's age. The equation is $2b - 4 = 14$. Add 4: $2b = 18$. Divide by 2: $b = 9$.
- 18) **Choice C is correct.** (M.8.G.A.5) The angles sum to 180° : $4x + (2x + 10) + (3x - 10) = 180$, so $9x = 180$ and $x = 20$. Therefore angle $P = 4x = 80^\circ$.
- 19) **Choice A is correct.** (M.8.G.B.8, M.8.G.B.7) Using $(\sqrt{8})^2 + (\sqrt{8})^2 = c^2$ gives $8 + 8 = 16$, so $c = \sqrt{16} = 4$.
- 20) **Choice A is correct.** (M.8.G.B.7) Corresponding angles are congruent. So $r = 41^\circ$.
- 21) **Choice B is correct.** (M.8.G.B.7) Decompose: rectangle and trapezoid. Rectangle area = $7 \times 4 = 28 \text{ in}^2$. Trapezoid area = $\frac{1}{2}(7+3) \times 2 = 10 \text{ in}^2$. Total = $28 + 10 = 38 \text{ in}^2$.
- 22) **The correct answer is A,B.** (M.8.EE.B.6) Options A and B both have slope 4, making them parallel. Option C has slope -4 , option D has slope $\frac{1}{4}$, and option E has slope 2, so none of these match.
- 23) **Choice D is correct.** (M.8.SP.A.1) The points form a diagonal band from upper left (low anxiety, high score) to lower right (high anxiety, low score), displaying negative correlation with clustered variation.
- 24) **Choice B is correct.** (M.8.SP.A.4) Marginal relative frequency for incomplete training: column total divided by grand total = $\frac{48}{200} = 0.24$. This is a marginal, not conditional, frequency.
- 25) **Choice D is correct.** (M.8.G.B.8) Data A: Deviations are $\{2, 1, 0, 1, 2\}$, $\text{MAD} = (2 + 1 + 0 + 1 + 2)/5 = 1.2$. Data B: Deviations are $\{5, 2, 0, 2, 5\}$, $\text{MAD} = (5 + 2 + 0 + 2 + 5)/5 = 2.8$. Data B has larger MAD, indicating greater spread from the mean.
- 26) **Choice B is correct.** (M.8.SP.A.2) $\text{MAD} = \frac{|-3| + |2| + |-1| + |4| + |-2|}{5} = \frac{3+2+1+4+2}{5} = \frac{12}{5} = 2.4$.



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Hi, Math Communicator!

◇ Grade 8 math is not only about getting a number. It is about explaining relationships and making your reasoning visible. ◇

★ **Remember this:** When you show steps, label diagrams, and write clear answers, you are joining the conversation that math is trying to have. You practiced across 7 full Grade 8 practice tests, and that repeated effort matters. ★

Communication Skills

- **Use Words:** Explain what the answer means.
- **Use Symbols:** Keep equations accurate.
- **Use Diagrams:** Show relationships visually.
- **Use Units:** Connect math to context.

Grade 8 test-day tip: For open-ended questions, answer in a complete thought: value, unit, and reason.

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

Jay Daie

Your Math Communication Coach

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 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!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

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.



Build Skills & Boost Confidence

Strengthen understanding and feel prepared for test day.

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! |



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