

3

Wisconsin

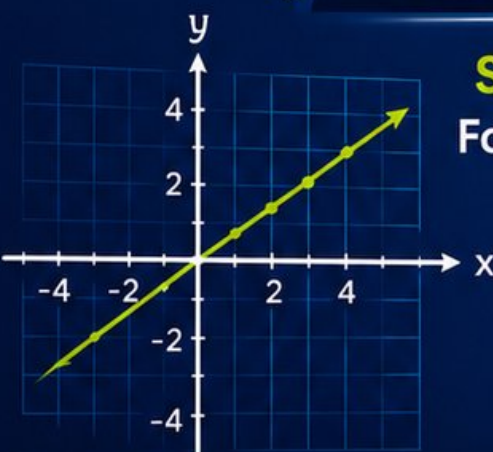
Forward Exam

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



$$y = mx + b$$
$$2x + 5 = 13$$
$$x = 4$$



3 PRINTED TESTS



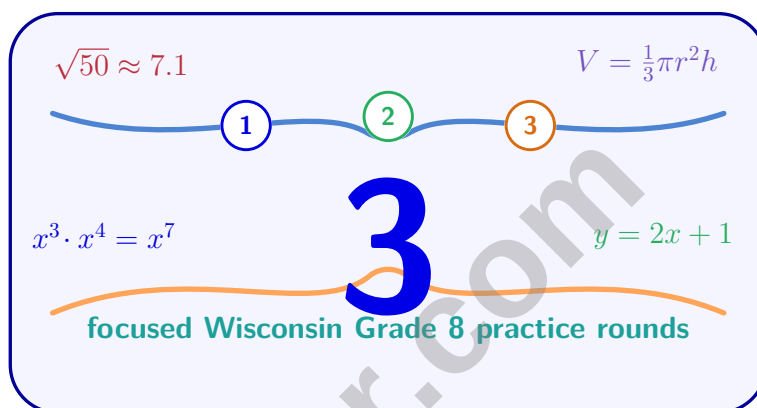
2 ONLINE TESTS



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

3 Wisconsin Forward Exam Grade 8 Math Practice Tests

Focused Forward Exam Prep for Grade 8 Skills and Test Confidence



Three 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!

Three focused rounds for sharper Forward Exam math thinking

This book gives you three 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 three-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?

Three Forward Exam tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	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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Table of Contents

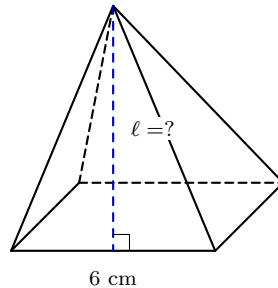


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- 1) Two parallel lines are cut by a transversal. If one angle is $(6y + 12)^\circ$ and its corresponding angle is $(3y + 51)^\circ$, find y .

☐ A. 13
☐ B. 15

☐ C. 17
☐ D. 19



2)

A square pyramid has a square base with side 6 cm and total surface area 96 cm^2 . Find the slant height ℓ .

☐ A. 4 cm
☐ B. 5 cm

☐ C. 6 cm
☐ D. 8 cm

- 3) What is the y -intercept of the line $y = 3x - 7$?

☐ A. -7
☐ B. 3

☐ C. 7
☐ D. -3

- 4) At a movie theater, adult tickets cost \$12 and child tickets cost \$8. If a family paid \$60 total for 6 tickets (mix of adult and child), which equation correctly represents the situation, where a is the number of adult tickets?

☐ A. $12a + 8(6 - a) = 60$
☐ B. $12a + 8a = 60$

☐ C. $a + 8 = 60$
☐ D. $12(6) + 8a = 60$



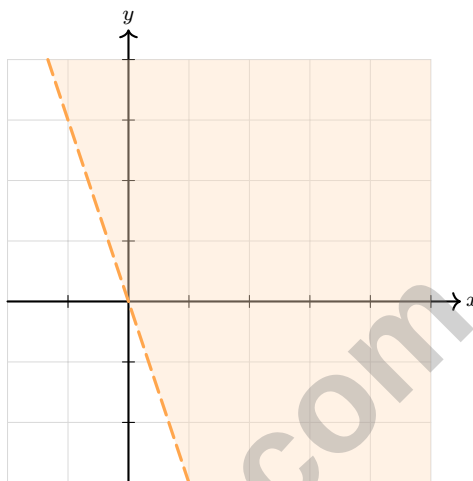
5) Solve: $5x + 2 > -8$

☐ A. $x > -2$

☐ C. $x > 2$

☐ B. $x < -2$

☐ D. $x < 2$



6)

What inequality matches this graph?

☐ A. $y > -3x$

☐ C. $y \geq -3x$

☐ B. $y < -3x$

☐ D. $y \leq -3x$

7) Which property is preserved under all three rigid transformations (translation, reflection, and rotation)?

☐ A. Position on the coordinate plane

☐ C. Length of sides

☐ B. Orientation (clockwise vs. counterclockwise)

☐ D. Size relative to other figures


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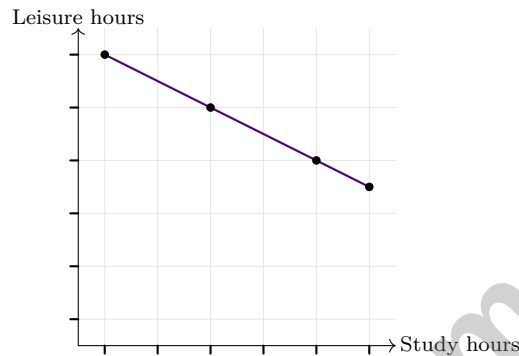
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8) A cone has volume $150\pi \text{ cm}^3$ and radius 5 cm. What is its height?

☐ A. 6 cm

☐ C. 12 cm

☐ B. 9 cm

☐ D. 18 cm


9)

The equation $y = -0.5x + 5$ represents the relationship between study hours and available leisure time. What is the x -intercept (when leisure time equals 0)?

☐ A. 5

☐ C. 10

☐ B. 20

☐ D. 50

10) A person compares two loans for \$2,000:

Loan	APR	Term
X	5%	2 years
Y	4%	3 years

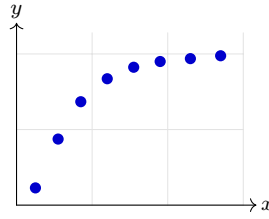
If the person wants to minimize total borrowing cost, which loan is better?

☐ A. Need more information

☐ C. They cost the same

☐ B. Loan Y

☐ D. Loan X

1)

A scatter plot shows years of experience (x-axis, 0–40 years) versus annual salary (y-axis, \$0–\$200k) for 100 workers. For the first 25 years, salaries increase steadily in a clear upward trend. After 25 years, salaries level off and stay relatively flat. What does this pattern indicate?

- ☐ A. The relationship is purely linear across all 40 years
 ☐ C. The relationship changes: linear growth early, then levels off (plateau)
- ☐ B. A single straight line can predict all salaries equally well
 ☐ D. Experience has no effect on salary after 25 years

2) Convert $0.\bar{7}$ to a fraction. Which step is incorrect?

- ☐ A. Let $x = 0.\bar{7}$.
 ☐ C. $10x - x = 7.\bar{7} - 0.\bar{7} = 7$ is wrong; should be 0.7.
- ☐ B. $10x = 7.\bar{7}$.
 ☐ D. $9x = 7$, so $x = \frac{7}{9}$.

3) What is 9.0×10^{-5} in standard form?

- ☐ A. 90,000
 ☐ C. 0.00009
- ☐ B. 0.9
 ☐ D. 0.000009

4) $\sqrt{24}$ is closest to which integer?

- ☐ A. 4
 ☐ C. 5
- ☐ B. 6
 ☐ D. 3



5) Which is the best estimate of π ?

☐ A. 2.14

☐ C. 3.14

☐ B. 3.0

☐ D. 3.5

6) A square pyramid-shaped roof covers a building with a square base of side length 10 m. The slant height is 13 m. What is the lateral surface area (the four triangular sides)?

☐ A. 130 m²

☐ C. 360 m²

☐ B. 260 m²

☐ D. 520 m²

7)

x	y
-2	7
0	3
2	-1
4	-5

Which equation represents the relationship shown in the table?

☐ A. $y = -2x + 3$

☐ C. $y = -x + 3$

☐ B. $y = 2x + 3$

☐ D. $y = 3x - 2$

8) Solve for x : $0.2x + 1.5 = 2.5$

☐ A. $x = 5$

☐ C. $x = 0.5$

☐ B. $x = 10$

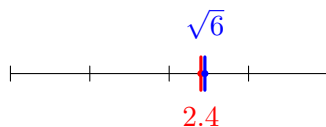
☐ D. $x = 20$



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Perfect Squares: $2^2 = 4$, $3^2 = 9$

Compare to $\sqrt{6}$ and 2.4



1)

Is $\sqrt{6}$ greater than 2.4 or less than 2.4?

☐ A. Cannot compare

☐ C. Equal to

☐ B. Less than

☐ D. Greater than

2) A teacher plots the relationship between attendance and test scores. The trend line shows a positive slope. What does this tell you?

☐ A. Attendance directly causes higher test scores

☐ C. Test scores determine how often students attend

☐ B. All students with perfect attendance pass the test

☐ D. As attendance increases, test scores tend to increase on average

3) In similar triangles, corresponding sides are in the ratio $\frac{3}{7}$. If the larger triangle has a side of 21 cm, find the corresponding side in the smaller triangle.

☐ A. 7 cm

☐ C. 15 cm

☐ B. 9 cm

☐ D. 28 cm

4) A student evaluated $f(x) = 3x + 2$ at $x = 4$ and wrote $f(4) = 3 + 2 + 4 = 9$. What error did the student make?

☐ A. Did not multiply x by the coefficient 3

☐ C. Added the constant instead of substituting correctly

☐ B. Multiplied 3 by 4 correctly but made an arithmetic mistake

☐ D. The answer is correct



5) Which is closest to $\sqrt{40}$?

☐ A. 5

☐ C. 6.3

☐ B. 6

☐ D. 7

6) Convert $0.\overline{72}$ to a fraction in simplest form.

☐ A. $\frac{8}{100}$

☐ C. $\frac{72}{90}$

☐ B. $\frac{72}{100}$

☐ D. $\frac{72}{99} = \frac{8}{11}$

7) The population of a country is 3.2×10^7 . What is this population in standard form?

☐ A. 3,200,000

☐ C. 320,000,000

☐ B. 3,200,000,000

☐ D. 32,000,000

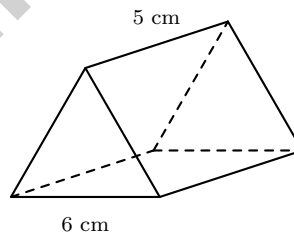
8) A square tile has side length 5 cm. The diagonal is $5\sqrt{2}$ cm. What is the best estimate of the diagonal?

☐ A. 5.5 cm

☐ C. 7.1 cm

☐ B. 6.5 cm

☐ D. 10.0 cm



9)

An equilateral triangular prism has triangular bases with side length 6 cm and prism length (height) 5 cm. The height of each equilateral triangle is approximately 5.2 cm. What is the approximate total surface area?

☐ A. 31.2 cm^2

☐ C. 121.2 cm^2

☐ B. 46.8 cm^2

☐ D. 141 cm^2



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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 A is correct.** (M.8.G.A.5) Corresponding angles are equal: $6y + 12 = 3y + 51$, so $3y = 39$ and $y = 13$.
- 2) **Choice B is correct.** (M.8.G.C.9) Base area = $6^2 = 36 \text{ cm}^2$. Lateral area = $96 - 36 = 60 \text{ cm}^2$. Lateral = $4 \times \frac{1}{2}(6)(\ell) = 12\ell = 60$, so $\ell = 5 \text{ cm}$.
- 3) **Choice A is correct.** (M.8.EE.B.6) In slope-intercept form $y = mx + b$, the y -intercept is b . Here $b = -7$.
- 4) **Choice A is correct.** (M.8.EE.C.7b) Total cost is adult tickets plus child tickets. If a adults, then $(6 - a)$ children. Equation: $12a + 8(6 - a) = 60$.
- 5) **Choice A is correct.** (M.8.EE.C.7a) Subtract 2: $5x > -10$. Divide by 5: $x > -2$.
- 6) **Choice A is correct.** (M.8.EE.C.8b) The DASHED line and shading ABOVE indicate a strict inequality with y greater: $y > -3x$.
- 7) **Choice C is correct.** (M.8.G.A.1) All rigid transformations preserve distance (side length) and angles. Position, orientation, and quadrant location may change during transformation.
- 8) **Choice D is correct.** (M.8.G.C.9) From $V = \frac{1}{3}\pi r^2 h$: $150\pi = \frac{1}{3}\pi \times 25 \times h \Rightarrow 450 = 25h \Rightarrow h = 18 \text{ cm}$.
- 9) **Choice C is correct.** (M.8.SP.A.3) Set $y = 0$: $0 = -0.5x + 5 \Rightarrow 0.5x = 5 \Rightarrow x = 10$.
- 10) **Choice D is correct.** (M.8.G.B.7) Loan X costs \$200 in interest; Loan Y costs \$240. Loan X is cheaper overall.
- 11) **The correct answer is 3.56×10^5 .** (M.8.EE.A.3) Move the decimal 5 places left to get 3.56; since the original number is greater than 1, the exponent is positive 5.
- 12) **The correct answer is $\frac{34}{99}$.** (M.8.G.A.1) Set $x = 0.\overline{34}$, so $100x = 34.\overline{34}$. Subtracting: $100x - x = 34$, giving $99x = 34$ and $x = \frac{34}{99}$.
- 13) **Choice D is correct.** (M.8.EE.A.2) Volume = $s^3 = 343$, so $s = \sqrt[3]{343} = 7 \text{ cm}$. One face is a square with side 7 cm, so area = $7^2 = 49 \text{ cm}^2$.
- 14) **Choice D is correct.** (M.8.EE.C.7b) Rewrite: $4.0 \times 10^5 + 0.6 \times 10^5 = (4.0 + 0.6) \times 10^5 = 4.6 \times 10^5$.
- 15) **Choice C is correct.** (M.8.EE.B.5) Slope $k = \frac{2}{5}$. Equation: $y = \frac{2}{5}x$.
- 16) **Choice A is correct.** (M.8.EE.C.8a) Check (3, 6) in both equations: $6 = 2(3) = 6 \checkmark$ and $6 = 3 + 3 = 6 \checkmark$. The solution is correct.
- 17) **Choice A is correct.** (M.8.EE.C.7) Find two numbers that multiply to -10 and add to 3: 5 and -2 . Check: $5 \cdot (-2) = -10$ and $5 - 2 = 3$.
- 18) **Choice B is correct.** (M.8.F.A.1) Base fare is \$5. Charge per mile is \$3. Total charge = $3m + 5$.
- 19) **Choice A is correct.** (M.8.F.A.2) Correct slope: $(6 - 2)/(3 - 1) = 4/2 = 2$. The student got $\frac{1}{2}$ by putting the run over the rise. Slope is rise over run, so the error is inverting rise (4) and run (2).
- 20) **Choice B is correct.** (M.8.F.A.3) The term n^2 makes this a quadratic function (nonlinear). Linear functions have only the first power of the variable.
- 21) **Choice A is correct.** (M.8.F.B.4) The sign-up fee \$25 is a one-time cost (the y -intercept, the value when $m = 0$). The monthly rate \$15 is the slope (rate of change per month). Therefore, $C = 15m + 25$. The slope tells how much additional cost per month; the intercept tells the starting cost.
- 22) **The correct answer is A, C.** (M.8.NS.A.1) Statement A is true because rational numbers are closed under addition. Statement C is true because any terminating decimal, such as $0.75 = \frac{3}{4}$, is rational. Statement B is false because two irrational numbers can multiply to a rational number, for example $\sqrt{2} \times \sqrt{8} = 4$. Statement D is false because integers are rational. Statement E is false because perfect squares have rational square roots, not irrational ones.
- 23) **Choice D is correct.** (M.8.G.A.2) Rotation preserves shape and size (rigid motion), so $D'E'F'G'$ is congruent to $DEFG$ and remains a parallelogram. Statements A, B, and C are all true.
- 24) **Choice A is correct.** (M.8.G.A.3) A dilation by scale factor k maps $(x, y) \rightarrow (kx, ky)$. With $k = \frac{1}{2}$: $(8, -6) \rightarrow (4, -3)$.
- 25) **Choice B is correct.** (M.8.G.C.9) Cube: $V_c = 5^3 = 125 \text{ cm}^3$. Pyramid: $V_{py} = \frac{1}{3} \times 25 \times 5 = \frac{125}{3} \approx 41.67 \text{ cm}^3$. Total: $125 + 41.67 \approx 166.67 \text{ cm}^3$, so 166 cm^3 is the closest choice.
- 26) **Choice C is correct.** (M.8.G.B.7) Large triangle = $\frac{1}{2} \times 16 \times 10 = 80 \text{ ft}^2$. Small triangle = $\frac{1}{2} \times 8 \times 5 = 20 \text{ ft}^2$. Remaining = $80 - 20 = 60 \text{ ft}^2$.



Hi, Grade 8 Math Star!

◇ You finished this practice set with real effort. Grade 8 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 8 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 8 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 8 Math Friend

PRACTICE TODAY, ACHIEVE TOMORROW!

GRADE
8

Give your child the edge they need with **3 full-length** Grade 8 Math practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, boosting confidence, and preparing for 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.



Build Skills & Boost Confidence

Strengthen understanding and feel prepared for test day.

COVERS ALL ESSENTIAL TOPICS

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



2 Extra Online Practice Tests Included!

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

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PRACTICE. PREPARE. SUCCEED.



Testinar

More Practice. More Confidence.
Better **Results**.