

9

Wisconsin

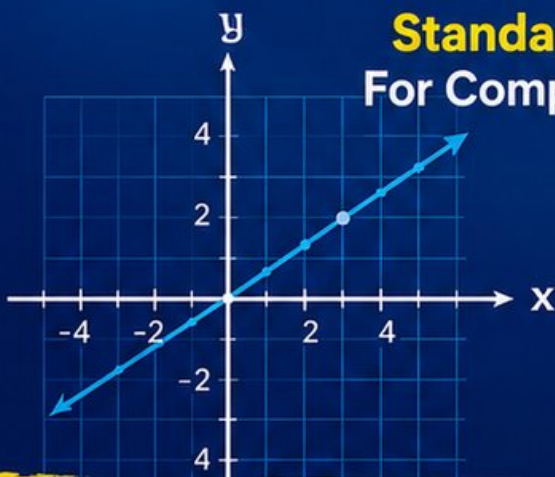
Forward Exam

Grade 8

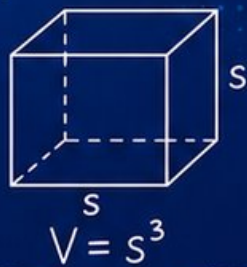
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



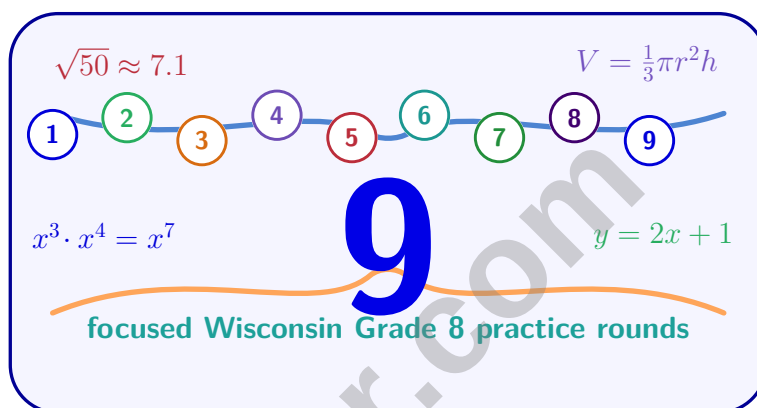
$$2x + 3y = 12$$
$$y = mx + b$$

**9** PRINTED
TESTS**2** ONLINE
TESTS

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

9 Wisconsin Forward Exam Grade 8 Math Practice Tests

Targeted Wisconsin Test Prep for Real Numbers, Functions, Geometry, and Probability



Nine 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!

Nine focused rounds for sharper Forward Exam math thinking

This book gives you nine 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 nine-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?

Nine Forward Exam tests, 360 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.
Tests 7–9	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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1) $(3 \times 10^8) + (5 \times 10^6) = ?$

☐ A. 8×10^{14}

☐ B. 30.5×10^6

☐ C. 8×10^6

☐ D. 3.05×10^8

2) Solve for x : $3(x - 4) = 2x + 5$

☐ A. $x = -7$

☐ B. $x = 7$

☐ C. $x = 17$

☐ D. $x = 9$

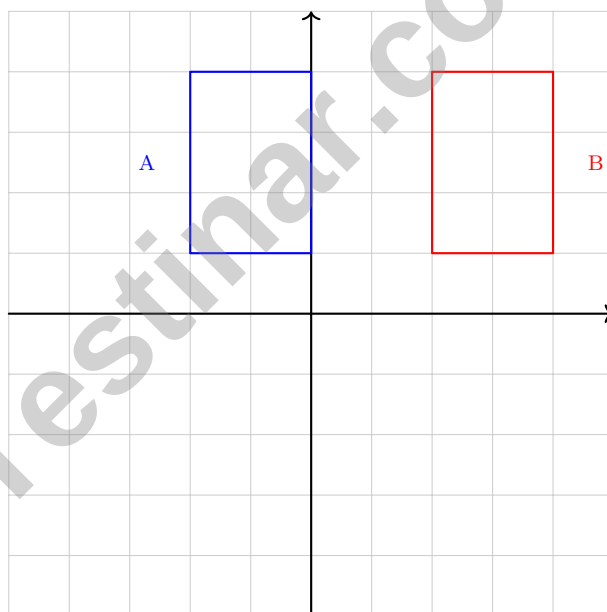
3) Solve: $-4x > 12$

☐ A. $x > -3$

☐ B. $x > 3$

☐ C. $x < -3$

☐ D. $x < 3$



4)

The figure shows shape A and shape B. Which single transformation maps A to B?

☐ A. Reflection across the y -axis☐ B. Translation 4 units right☐ C. Rotation 90° counterclockwise☐ D. Dilation with scale factor 2

5) A bank loan of \$10,000 at 5% simple interest is repaid in 5 equal annual installments. The total simple interest over the full term is \$2,500. How much principal and interest remains owed after making the first \$2,500 payment?

- ☐ A. \$8,000 ☐ C. \$10,000
☐ B. \$8,500 ☐ D. \$9,500

6) If a square has a side length of 9 cm, what is its area?

- ☐ A. 36 cm² ☐ C. 81 cm²
☐ B. 72 cm² ☐ D. 90 cm²

7) What is the slope of a line passing through $(-1, 4)$ and $(2, -2)$?

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

8) Solve:
$$\begin{cases} 5x - 2y = 4 \\ 2x + y = 7 \end{cases}$$

- ☐ A. (1, 2) ☐ C. (1.2, 1)
☐ B. (2, 1) ☐ D. (2, 3)

9) Multiply: $(x + 3)(x - 5)$

- ☐ A. $x^2 - 15$ ☐ C. $x^2 - 2x - 15$
☐ B. $x^2 + 3x - 5$ ☐ D. $x^2 + 8x - 15$



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10) For the inequality $y \leq -\frac{1}{2}x + 3$, which point is in the solution region?

☐ A. (0, 5)

☐ C. (2, 4)

☐ B. (0, 0)

☐ D. (4, 4)

11) Which ordered pair, if added to $\{(1, 2), (2, 4), (3, 6)\}$, would make it NOT a function?

☐ A. (4, 8)

☐ C. (2, 4)

☐ B. (3, 8)

☐ D. (5, 10)

12) Plan A costs \$15 per month: $A(m) = 15 + 0.10m$. Plan B shown in table: (0, \$20), (100, \$25), (200, \$30), (300, \$35). Which plan has the higher base cost?

m	0	100	200	300
Plan B	\$20	\$25	\$30	\$35

☐ A. Plan A

☐ C. Both cost the same.

☐ B. Plan B

☐ D. Cannot be determined.

13) Write 4.7×10^{-4} in decimal (standard) form.

14) Which table shows a LINEAR function?

x	2	4	6	8
y	5	11	17	23

☐ A. Yes; the y -values increase by 6 each step

☐ C. No; y is greater than x

☐ B. No; x increases by 2 each time

☐ D. No; the equation is $y = 3x - 1$



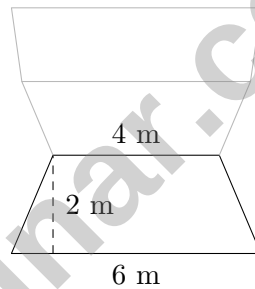
1) A student claims that $0.\overline{3}$ is less than $\frac{1}{3}$. Which is true?

- ☐ A. The student is correct; $0.\overline{3} < \frac{1}{3}$. ☐ C. The student is incorrect; $0.\overline{3} > \frac{1}{3}$.
☐ B. We cannot compare them without a calculator. ☐ D. The student is incorrect; $0.\overline{3} = \frac{1}{3}$.

2) Four angles are formed at the intersection of two lines. If one angle measures b° , which expression represents the sum of the measures of the other three angles?

- ☐ A. b ☐ C. $360 - b$
☐ B. $180 - b$ ☐ D. $540 - b$

3) A composite figure is made of three trapezoids stacked vertically. The first trapezoid has bases 4 m and 6 m with height 2 m. What is just this trapezoid's area?



- ☐ A. 8 m^2 ☐ C. 12 m^2
☐ B. 10 m^2 ☐ D. 16 m^2

4) For the data $\{4, 4, 8, 8\}$, the mean is 6. Calculate the MAD.

- ☐ A. 0 ☐ C. 4
☐ B. 2 ☐ D. 6



5) A fair coin is flipped and a standard six-sided die is rolled. What is the probability of getting heads AND a 4?

☐ A. $\frac{1}{12}$

☐ C. $\frac{1}{8}$

☐ B. $\frac{1}{6}$

☐ D. $\frac{2}{3}$

6) A student has 6 different books and wants to arrange all of them on a shelf. How many arrangements are possible?

☐ A. $6 + 5 + 4 + 3 + 2 + 1 = 21$

☐ C. $6! = 720$

☐ B. $6^6 = 46,656$

☐ D. $\binom{6}{6} = 1$

7) A two-way table with 280 people:

	Owens Phone	No Phone	Total
Age 13–17	175	21	196
Age 18+	78	6	84
Total	253	27	280

Among those who own a phone, what is the relative frequency for ages 13–17, rounded to the nearest hundredth?

☐ A. 0.62

☐ C. 0.78

☐ B. 0.69

☐ D. 0.89

8) A scientist collected data on plant height (cm) versus days of growth. Which scatter plot shows a trend line that is a POOR fit?

☐ A. Points spread far from the line with large vertical distances

☐ C. Line passes through the center of the data cloud

☐ B. Half the points are above the line and half are below

☐ D. Points clustered tightly around the line with minimal scatter


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1) A student graphs $y \geq x$ and mistakenly shades BELOW the line. What is the error?

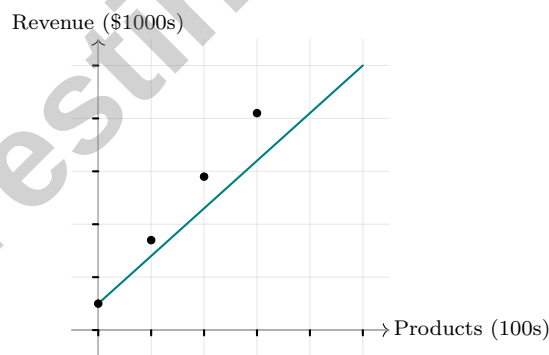
- ☐ A. Should have used a dashed line ☐ C. Should have shaded BELOW the line
☐ B. Should have shaded ABOVE the line ☐ D. Should have used the inequality $y < x$

2) A cylinder has radius 1.5 inches and height 8 inches. What is the surface area? (Use $\pi \approx 3.14$.)

- ☐ A. 28.3 in^2 ☐ C. 75.4 in^2
☐ B. 47.1 in^2 ☐ D. 89.5 in^2

3) Three solids have the same radius $r = 2 \text{ cm}$. A cylinder with height 6 cm, a cone with height 6 cm, and a sphere. Rank them by volume from smallest to largest. (Use $\pi \approx 3.14$.)

- ☐ A. Cone, Sphere, Cylinder ☐ C. Cylinder, Sphere, Cone
☐ B. Sphere, Cone, Cylinder ☐ D. Cone, Cylinder, Sphere



4)

A company's revenue model is $R = 12x + 500$, where R is revenue and x is the number of products sold. If revenue is \$8,900, how many products were sold?

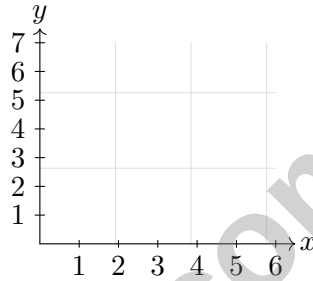
- ☐ A. 525 ☐ C. 675
☐ B. 700 ☐ D. 725



5) Is $y = x^2$ a function?

- ☐ A. No, because it has an exponent. ☐ C. Yes, because every real number input produces exactly one output.
- ☐ B. No, because negative inputs produce positive outputs. ☐ D. Yes, only when x is positive.

6) Graph the proportional relationship $y = \frac{3}{2}x$ by finding three points and identifying the slope. What is the slope?



7) Real-world extrapolation: Email subscribers grow as $S(d) = 150 + 40d$ per day. Competitor at day 5 has 500 subscribers, day 10 has 700. Which will have more subscribers at day 15?

- ☐ A. First email service ☐ C. Both equal
- ☐ B. Competitor ☐ D. Cannot determine



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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.7b) Rewrite: $3 \times 10^8 + 0.05 \times 10^8 = (3 + 0.05) \times 10^8 = 3.05 \times 10^8$.
- 2) **Choice C is correct.** (M.8.EE.C.7b) Distribute: $3x - 12 = 2x + 5$. Subtract $2x$: $x - 12 = 5$. Add 12: $x = 17$. Check: $3(17 - 4) = 3(13) = 39$ and $2(17) + 5 = 39$ ✓. (Distractor B from forgetting to distribute the 3; D from arithmetic error.)
- 3) **Choice C is correct.** (M.8.EE.C.7a) Divide by -4 (FLIP the inequality): $x < \frac{12}{-4} = -3$.
- 4) **Choice B is correct.** (M.8.G.A.1) Shape A has a corner at $(-2, 1)$ and shape B has a corresponding corner at $(2, 1)$. The horizontal shift is $2 - (-2) = 4$ units.
- 5) **Choice C is correct.** (M.8.G.B.7) Total amount to repay: \$10,000 (principal) + \$2,500 (interest) = \$12,500. Five equal annual payments: $\$12,500 / 5 = \$2,500$ per payment. After first payment of \$2,500, remaining owed is $\$12,500 - \$2,500 = \$10,000$.
- 6) **Choice C is correct.** (M.8.EE.A.2) Area of a square = $s^2 = 9^2 = 81 \text{ cm}^2$.
- 7) **Choice D is correct.** (M.8.EE.B.6) Slope = $\frac{-2 - 4}{2 - (-1)} = \frac{-6}{3} = -2$.
- 8) **Choice D is correct.** (M.8.EE.C.8a) Check $(2, 3)$: $5(2) - 2(3) = 10 - 6 = 4$ and $2(2) + 3 = 7$. So the solution is $(2, 3)$.
- 9) **Choice C is correct.** (M.8.EE.C.7) FOIL: $(x + 3)(x - 5) = x^2 - 5x + 3x - 15 = x^2 - 2x - 15$.
- 10) **Choice B is correct.** (M.8.EE.C.8b) Test each point in $y \leq -\frac{1}{2}x + 3$: (A) $5 \leq -\frac{1}{2}(0) + 3 = 3$? NO. (B) $0 \leq 3$? YES. (C) $4 \leq -\frac{1}{2}(2) + 3 = 2$? NO. (D) $4 \leq -\frac{1}{2}(4) + 3 = 1$? NO.
- 11) **Choice B is correct.** (M.8.F.A.1) Input 3 already maps to 6. Adding $(3, 8)$ would make input 3 map to two different outputs (6 and 8), violating the function definition.
- 12) **Choice B is correct.** (M.8.F.A.2) Plan A base cost: \$15. Plan B at $m = 0$: \$20. Since $20 > 15$, Plan B is higher.
- 13) **The correct answer is 0.00047.** (M.8.EE.A.3) Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 14) **Choice A is correct.** (M.8.F.A.3) The y -values are 5, 11, 17, 23. The differences are $11 - 5 = 6$, $17 - 11 = 6$, and $23 - 17 = 6$. Because the difference is constant for equal steps in x , the function is linear.
- 15) **Choice A is correct.** (M.8.G.A.5) The sum of angles in a pentagon is 540° . So $\angle E = 540 - 100 - 120 - 110 - 130 = 80^\circ$.
- 16) **Choice D is correct.** (M.8.NS.A.2) By the Pythagorean theorem, $\sqrt{3^2 + 4^2} = \sqrt{25} = 5$ units.
- 17) **Choice D is correct.** (M.8.EE.A.1) $(-2)^4 = (-2) \cdot (-2) \cdot (-2) \cdot (-2) = 16$ (even exponent, positive result).
- 18) **Choice C is correct.** (M.8.EE.B.5) In $y = kx$, the constant of proportionality k is the unit rate. Here $k = 4$, so the unit rate is 4 units of y per 1 unit of x .
- 19) **Choice A is correct.** (M.8.F.B.4) Initial flowers: 8 (intercept). New flowers planted per week: 3 (slope). Equation: $f = 3w + 8$.
- 20) **The correct answer is A,E.** (M.8.G.C.9) A is true because $V = 3.14(4^2)(10) = 502.4 \text{ cm}^3$. E is true because a cone's volume is one-third the volume of a cylinder with the same base and height. B is false because the sphere's volume is about 267.95 cm^3 , not the cylinder volume. C is false because the cone's volume with height 10 cm is about 167.47 cm^3 . D is false because a cylinder with height 6 cm has volume 301.44 cm^3 , which is greater than the sphere volume.
- 21) **Choice A is correct.** (M.8.F.B.5) Steep rise early (fast growth), then level off (approaching maximum) matches plant growth. B is linear, C is linear decrease, D accelerates (not levels off).
- 22) **Choice B is correct.** (M.8.G.A.2) Since the triangles are congruent, all corresponding sides and angles are equal. Both have a right angle and the same three side lengths.
- 23) **Choice D is correct.** (M.8.G.A.3) Reverse the translation: $(x, y) \rightarrow (x - 3, y + 5)$. So $(4, -2) \rightarrow (4 - 3, -2 + 5) = (1, 3)$.
- 24) **Choice B is correct.** (M.8.G.A.5) Alternate exterior angles are congruent: $7k - 3 = 5k + 17 \Rightarrow 2k = 20 \Rightarrow k = 10$.
- 25) **The correct answer is 7.1.** (M.8.NS.A.1) Since $7^2 = 49$ and $7.1^2 = 50.41$, we have $\sqrt{50}$ between 7.0 and 7.1, closer to 7.1. More precisely, $7.07^2 \approx 49.98 \approx 50$. To the nearest tenth, $\sqrt{50} \approx 7.1$.
- 26) **Choice B is correct.** (M.8.G.B.8, M.8.G.B.7) From $(\sqrt{32})^2 + (\sqrt{4})^2 = c^2$, we get $32 + 4 = 36$, so $c = \sqrt{36} = 6$.
- 27) **Choice A is correct.** (M.8.G.B.8) Correct method: $d = \sqrt{(3 - 0)^2 + (0 - 4)^2} = \sqrt{9 + 16} = \sqrt{25} = 5$ units. The student used addition instead of the Pythagorean Theorem.



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Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. This high-stamina book gave you nine substantial Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 8 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

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

Jay Daie

Your Review Coach

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

Help your child excel in math with **9 full-length Grade 8 practice tests** designed to reflect real test formats and cover all key math standards.

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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 |
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