

Wisconsin

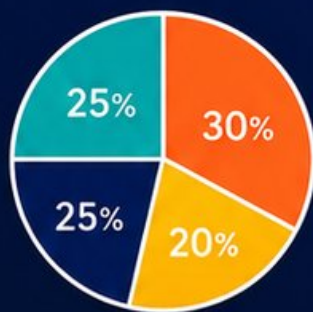
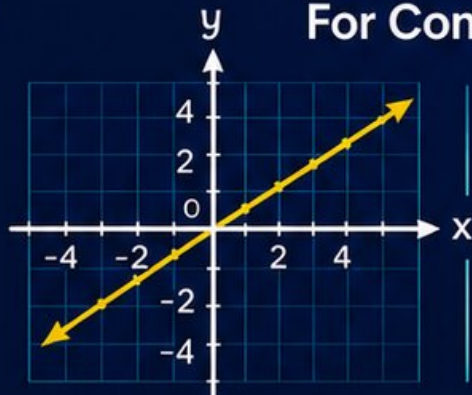
Forward Exam

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

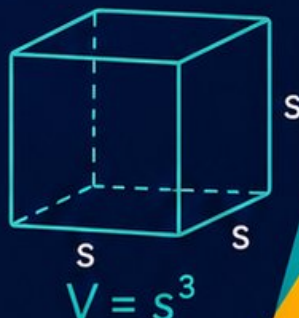


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



4 PRINTED TESTS



2 ONLINE TESTS

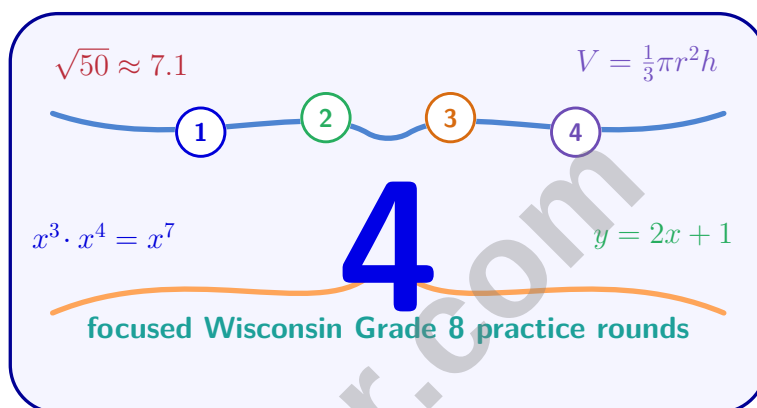


Use these **two additional online practice tests** for extra review after the printed tests in this book.



4 Wisconsin Forward Exam Grade 8 Math Practice Tests

Compact Forward Exam Prep for Functions, Transformations, Geometry, and Data



Four 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!

Four focused rounds for sharper Forward Exam math thinking

This book gives you four 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 four-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?

Four Forward Exam tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	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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& answers

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1) Simplify using the laws of exponents: $\frac{x^7}{x^3}$

☐ A. x^{10}

☐ B. x^{21}

☐ C. x^4

☐ D. x^{-4}

2) The elevation rises 500 feet over a horizontal distance of 2000 feet. What is the slope?

3) Maria is currently 4 years older than her sister Emma. In 3 years, Maria will be twice Emma's age. How old is Emma now?

☐ A. 1

☐ B. 2

☐ C. 3

☐ D. 5

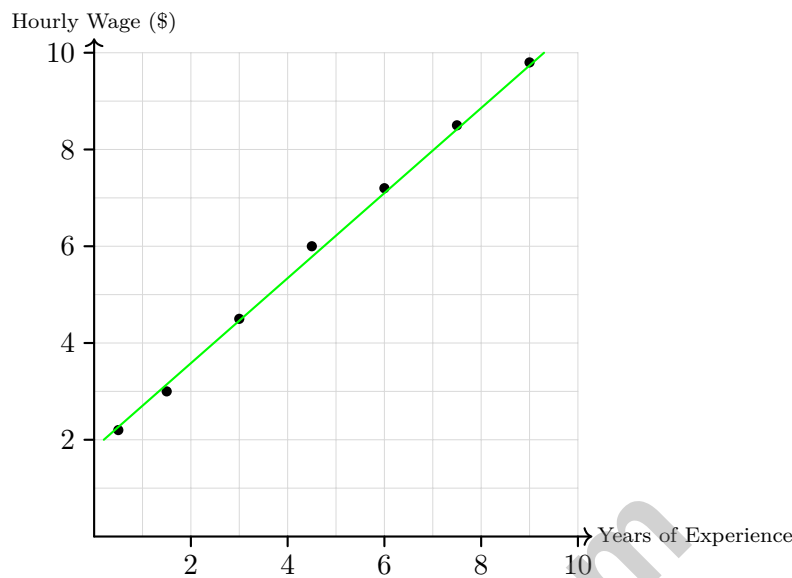
4) Sketch or describe a graph showing: a person walks for 2 hours (increasing distance), rests for 1 hour (no change in distance), then runs for 1 hour (distance increases again, faster). What geometric shapes make up this graph?



- 5) A diagonal walkway connects two opposite corners of a rectangular plaza that is 30 m by 40 m. How long is the walkway?
- ☐ A. 35 m ☐ C. 70 m
☐ B. 50 m ☐ D. 1200 m
- 6) A student finds the hypotenuse of a 7-24-? right triangle. They calculate $c^2 = 7 + 24 = 31$. Is this method correct?
- ☐ A. Yes; $c = \sqrt{31}$ units ☐ C. Yes; the hypotenuse is 31 units
☐ B. No; they should add the squares: $c^2 = 49 + 576 = 625$, so $c = 25$ ☐ D. No; they forgot to multiply by 2
- 7) Angles A and B are complementary. If $A = 38^\circ$, what is the measure of angle B ?
- ☐ A. 52° ☐ C. 142°
☐ B. 62° ☐ D. 128°



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8)

A company tracks years of experience versus hourly wage. Based on the trend line, what is the approximate slope (wage increase per year)?

- ☐ A. \$1.10 per year ☐ C. \$1 per year
☐ B. \$2 per year ☐ D. \$0.50 per year

9) A triangle has a perimeter of 15 inches. If the triangle is dilated by a scale factor of $\frac{1}{2}$, what is the perimeter of the dilated triangle?

- ☐ A. 30 inches ☐ C. 15 inches
☐ B. 7.5 inches ☐ D. 10 inches

1.2 34 3434...

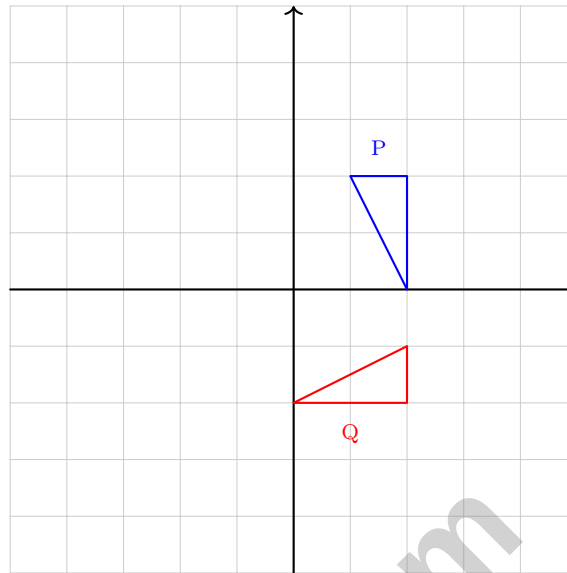
34 repeats

10)

The decimal $1.2\overline{34}$ (where 34 repeats) is:

- ☐ A. Irrational ☐ C. Neither rational nor irrational
☐ B. Equal to π ☐ D. Rational





1)

Triangle P is rotated 90° clockwise about the origin to produce triangle Q. Is this correct?

- ☐ A. Yes, the rotation is correct
☐ B. No, a 90° counterclockwise rotation would be needed
☐ C. No, a 270° counterclockwise rotation would be needed
☐ D. No, a 180° rotation would be needed

2) A linear equation shows the relationship between time spent studying (x , hours) and test score (y , points): $y = 5x + 60$. What is the slope, and what does it represent?

- ☐ A. Slope is 5; for each additional hour of study, the test score increases by 5 points
☐ B. Slope is 60; the starting test score is 60 points
☐ C. Slope is $5x$; score changes with study time
☐ D. Slope is 60; for each additional hour, the score increases by 60 points



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- 3) A quadrilateral has three interior angles: 75° , 95° , and 110° . What is the measure of the fourth angle? Show your work.

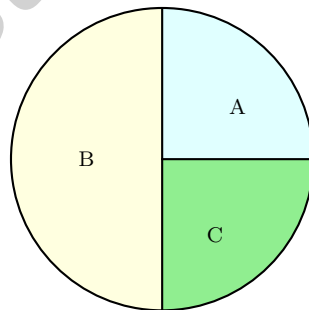
- 4) A concert sells premium tickets at \$60 and economy tickets at \$20. A total of 300 tickets sold for \$12,000. How many premium tickets were sold?

- ☐ A. 75
☐ B. 100

- ☐ C. 125
☐ D. 150

- 5) A function f shows the distance (in miles) from home after t minutes of driving. Which describes what $f(20)$ means?

- ☐ A. After driving for 20 miles, you are at some time
☐ B. After 20 minutes of driving, you are 20 miles from home
☐ C. The distance from home after 20 minutes of driving
☐ D. It takes 20 minutes to drive some distance



6)

The spinner is divided into three sections. Section A covers 90° , section B covers 180° , and section C covers 90° . What is the probability of landing on section B?

- ☐ A. $\frac{1}{4}$
☐ B. $\frac{2}{5}$

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



1) A right triangle has legs of length 6 and 8. What is the length of the hypotenuse?

☐ A. 10

☐ C. 11

☐ B. 12

☐ D. 14

2) Simplify $(y^4)^3$.

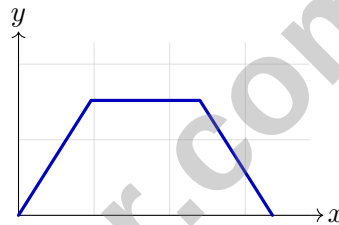
☐ A. y^7

☐ C. y^{-12}

☐ B. y^1

☐ D. y^{12}

3) A graph shows: starting at origin, increasing to $(2, 4)$, then constant to $(5, 4)$, then decreasing to $(7, 0)$. Where is the y -intercept?



☐ A. $(0, 0)$

☐ C. $(5, 4)$

☐ B. $(2, 4)$

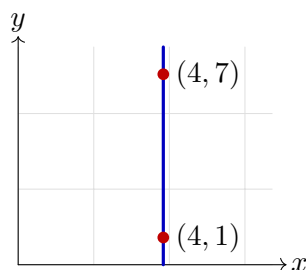
☐ D. $(7, 0)$

4) In $y = x^2 - 5$, what is the exponent on x ?



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& answers

- 5) A graph shows a line with an undefined slope passing through $(4, 1)$ and $(4, 7)$. Which description fits?



- ☐ A. The line is horizontal
- ☐ B. The line is slanted at 45°
- ☐ C. The line has zero slope
- ☐ D. The line is vertical
- 6) A trapezoid has a top base of 5 cm, a bottom base of 9 cm, and two equal legs. If the perimeter is 30 cm, what is the length of each leg?

- ☐ A. 6 cm
- ☐ B. 7 cm
- ☐ C. 8 cm
- ☐ D. 9 cm

- 7) The table shows $f(x)$. If $f(x) = 8$, what is x ?

x	1	2	3	4
$f(x)$	4	6	8	10

- ☐ A. 1
- ☐ B. 2
- ☐ C. 3
- ☐ D. 4



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 C is correct.** (M.8.EE.A.1) When dividing powers with the same base, subtract exponents: $\frac{x^7}{x^3} = x^{7-3} = x^4$.
- 2) **The correct answer is $\frac{1}{4}$.** (M.8.EE.C.8) Slope = $\frac{500}{2000} = \frac{1}{4} = 0.25$.
- 3) **Choice A is correct.** (M.8.EE.C.8c) Let e = Emma's current age. Then Maria's age is $e + 4$. In 3 years: Emma is $e + 3$, Maria is $e + 7$. The condition gives $e + 7 = 2(e + 3)$, so $e + 7 = 2e + 6$, thus $e = 1$.
- 4) **The correct answer is 3 line segments.** (M.8.F.B.5) The first 2 hours show an upward-sloping line. The next hour is a horizontal line (zero slope). The final hour is an upward-sloping line with a steeper slope than the first segment because the person is running faster. Together, these form a piecewise linear function.
- 5) **Choice B is correct.** (M.8.G.B.8, M.8.G.B.7) The 3-4-5 triple scaled by 10 is 30-40-50. The diagonal $d^2 = 30^2 + 40^2 = 900 + 1600 = 2500$, so $d = 50$ m.
- 6) **Choice B is correct.** (M.8.G.B.8) Correct: $c^2 = 7^2 + 24^2 = 49 + 576 = 625$, so $c = 25$. The student mistakenly added the legs instead of squaring them.
- 7) **Choice A is correct.** (M.8.G.B.7) Complementary angles sum to 90° . So $B = 90 - 38 = 52^\circ$.
- 8) **Choice C is correct.** (M.8.SP.A.2) Using two points on the drawn trend line, slope $\approx \frac{10-2}{9.3-0.2} = \frac{8}{9.1} \approx 0.88$, which is closest to about \$1 per year.
- 9) **Choice B is correct.** (M.8.G.A.4) Perimeter scales linearly with the scale factor. $15 \times \frac{1}{2} = 7.5$ inches. A scale factor less than 1 creates a reduction.
- 10) **Choice D is correct.** (M.8.NS.A.1) Any decimal that eventually repeats is rational. In fact, $1.2\overline{34} = 1.2343434\ldots = \frac{611}{495}$, so it can be written exactly as a fraction.
- 11) **Choice D is correct.** (M.8.G.A.1) $0.\overline{2} = \frac{2}{9}$ (1-digit repeat $\rightarrow 9$) and $0.\overline{22} = \frac{22}{99}$ (2-digit repeat $\rightarrow 99$).
- 12) **Choice D is correct.** (M.8.NS.A.2) $8^2 = 64$ and $9^2 = 81$. Since 68 is closer to 64 than to 81 (distance 4 vs. 13), $\sqrt{68} \approx 8.25$ is closest to 8.
- 13) **Choice D is correct.** (M.8.EE.A.3) The student's coefficient 56.2 is outside $[1, 10]$. Correct form requires moving the decimal one more place: 5.62×10^4 .
- 14) **Choice D is correct.** (M.8.NS.A.2) $\sqrt{3} \approx 1.73$, so $\sqrt{3} + 1 \approx 2.73$, which falls between 2 and 3. Distractors A, C, and D represent underestimation, overestimation, and far overestimation of $\sqrt{3}$.
- 15) **Choice C is correct.** (M.8.G.C.9) A cube has 6 faces. Each face has area $3^2 = 9$ in². Total = $6 \times 9 = 54$ in².
- 16) **Choice A is correct.** (M.8.EE.B.6) The y -intercept is -2 . Using $(4, -4)$: slope = $\frac{-4 - (-2)}{4 - 0} = \frac{-2}{4} = -\frac{1}{2}$.
- 17) **The correct answer is $\frac{1}{7}$.** (M.8.G.B.7) Total: 15 tokens. $P(\text{black first}) = \frac{6}{15}$; $P(\text{black second} \mid \text{black first}) = \frac{5}{14}$. Product: $\frac{6}{15} \times \frac{5}{14} = \frac{1}{7}$.
- 18) **Choice D is correct.** (M.8.EE.C.7b) Subtract 1.2: $0.3p = 1.2$. Divide by 0.3: $p = 4$.
- 19) **Choice A is correct.** (M.8.EE.C.7a) "Product of a number and -2 " is $-2x$; "greater than 8" is > 8 .
- 20) **Choice A is correct.** (M.8.EE.C.8b) Subtract $3x$ from both sides: $-2y < -3x + 6$. Divide by -2 (flip inequality): $y > \frac{3}{2}x - 3$.
- 21) **Choice B is correct.** (M.8.G.A.1) Two reflections across perpendicular lines (axes) equals a 180° rotation about their intersection (the origin).
- 22) **The correct answer is A,C.** (M.8.F.A.2) From the table, $g(1) = 5$ and $g(3) = 13$, so A and C are true. The other listed values are incorrect, and the function increases by 4, not 5, for each unit increase in x .
- 23) **Choice D is correct.** (M.8.G.C.9) Use $V = \frac{1}{3}\pi r^2 h$: $392.5 = \frac{1}{3} \times 3.14 \times r^2 \times 15$. Since $\frac{1}{3} \times 15 = 5$, $392.5 = 15.7r^2$, so $r^2 = 25$ and $r = 5$ cm.
- 24) **Choice B is correct.** (M.8.SP.A.3) The y -intercept (here, -1) is the predicted value when $x = 0$. On the graph, it is where the line crosses the y -axis.
- 25) **Choice C is correct.** (M.8.G.B.7) Avoiding 12% interest is better than earning 6% return. For the same \$1,500 over 5 years, paying down 12% debt avoids about \$900 of simple interest, while a 6% investment earns about \$450 of simple interest.



Hi, Brave Learner!

◇ No one gets stronger by only doing easy problems. The questions that slowed you down were part of the training. This carefully paced book gave you four steady Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** Mistakes are not proof that you cannot do math. They are directions. They show what to review, what to ask about, and what to practice next. ★

How to Use Mistakes

- **Name It:** Was it reading, setup, arithmetic, or checking?
- **Fix It:** Correct the work while the question is fresh.
- **Repeat It:** Try one similar problem soon.
- **Remember It:** Write the lesson in your own words.

Grade 8 test-day tip: Treat every corrected error as a point you are preparing to earn next time.

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

Jay Daie

Your Brave-Learning Coach

PRACTICE TODAY, ACHIEVE TOMORROW!

Give your child the confidence and skills they need with **4 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!

4



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
- ✓ 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!



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