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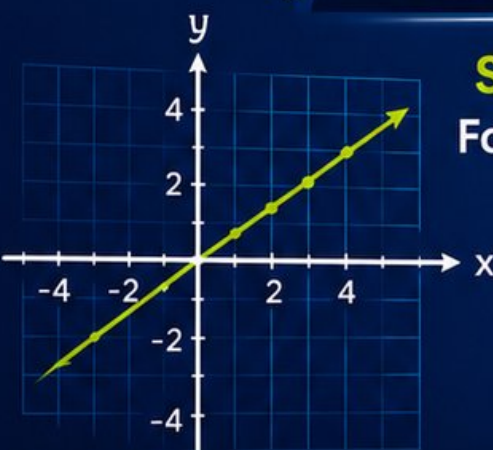
Florida FAST

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



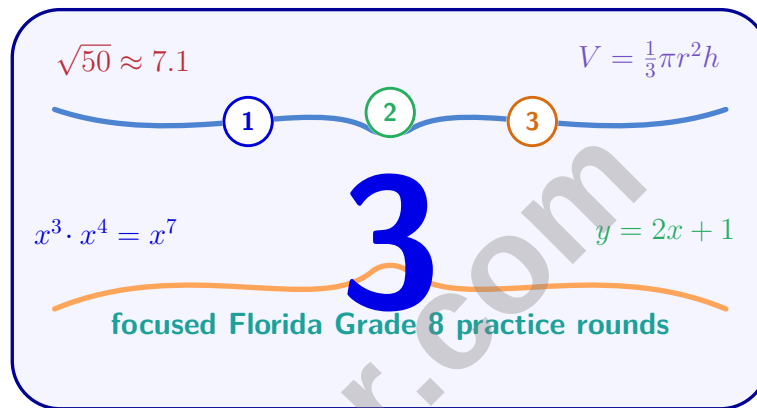
2 ONLINE
TESTS



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

3 Florida FAST Grade 8 Math Practice Tests

Three Grade 8 FAST Rounds for Confident Review



Three complete 40-question Grade 8 FAST 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, Florida Grade 8 Problem Solver!

Three focused rounds for sharper FAST math thinking

This book gives you three full Grade 8 FAST 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 Florida 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.

Florida 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 FAST tests, 120 questions, and a focused review path

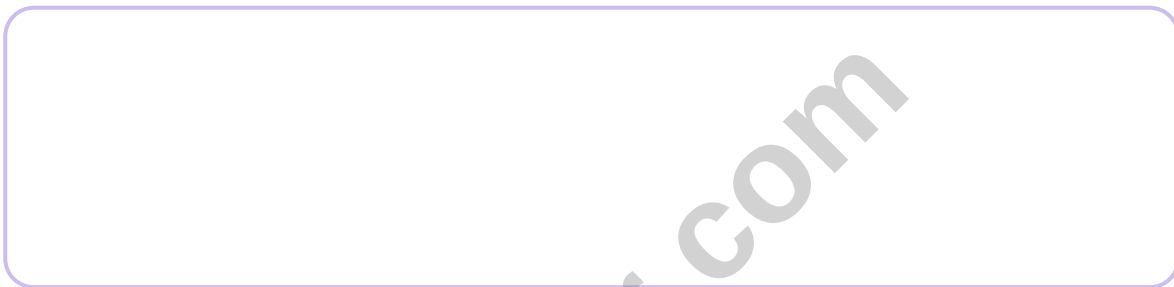
Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

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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& answers

Table of Contents



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

☐ A. $x = -7$

☐ C. $x = 17$

☐ B. $x = 7$

☐ D. $x = 9$

2) A rectangular prism has dimensions $2\text{ m} \times 3\text{ m} \times 4\text{ m}$ with surface area 52 m^2 . If all dimensions are doubled to $4\text{ m} \times 6\text{ m} \times 8\text{ m}$, by what factor does the surface area increase?

☐ A. Multiplied by 2

☐ C. Multiplied by 4

☐ B. Multiplied by 3

☐ D. Multiplied by 8

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

4) Convert $0.\overline{2}$ to a fraction. Show the algebraic steps (let $x = \dots$, multiply, subtract, solve).

5) A line passes through $(1, 3)$ and has slope -1 . What is the y -intercept?

☐ A. 2

☐ C. -1

☐ B. 3

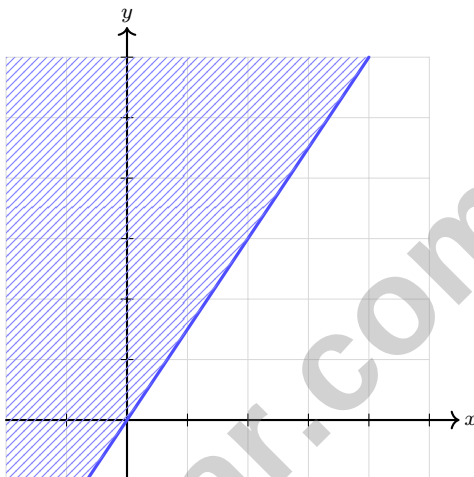
☐ D. 4



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6) Explain: Why must the inequality symbol be flipped when solving $-3x \leq 12$?

- | | |
|--|---|
| ☐ A. Multiplying by a negative reverses the direction of the inequality | ☐ C. Dividing by any negative number requires flipping |
| ☐ B. It is a rule you must always follow, regardless of the sign | ☐ D. Flipping prevents getting a negative variable |



7)

Which inequality does this graph show?

- | | |
|--|---|
| ☐ A. $y > 1.5x$ | ☐ C. $y \geq 1.5x$ |
| ☐ B. $y < 1.5x$ | ☐ D. $y \leq 1.5x$ |

8) When a figure is rotated 270° counterclockwise about the origin, the transformation rule is:

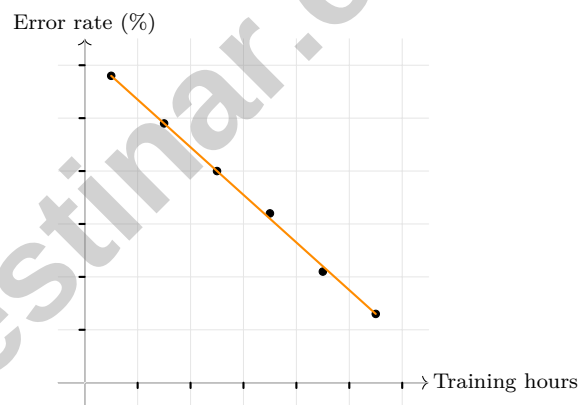
- | | |
|--|---|
| ☐ A. $(x, y) \rightarrow (y, -x)$ | ☐ C. $(x, y) \rightarrow (-x, -y)$ |
| ☐ B. $(x, y) \rightarrow (-y, x)$ | ☐ D. $(x, y) \rightarrow (y, x)$ |



- 9) A sphere has radius r . A cylinder with radius r and height $2r$ has what relationship to the sphere's volume?

- ☐ A. Cylinder volume = Sphere volume ☐ C. Cylinder volume = $2 \times$ Sphere volume
☐ B. Cylinder volume = $1.5 \times$ Sphere volume ☐ D. Cylinder volume = $3 \times$ Sphere volume

- 10) A square has an area of 88 square units. Give a decimal estimate for its side length to one decimal place.



- 11)

A training program finds error rate follows $E = -0.9t + 6$, where E is error rate (

- ☐ A. Error rate increases as training time increases
- ☐ B. Error rate decreases as training time increases
- ☐ C. Error rate stays constant regardless of training
- ☐ D. Training has no effect on errors



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1) A right triangle has legs of $\sqrt{7}$ and 3. What is the hypotenuse?

☐ A. $\sqrt{16}$

☐ B. 4

☐ C. $\sqrt{10}$

☐ D. 10

2) Which is larger: $\sqrt{26}$ or $\sqrt{27}$?

☐ A. $\sqrt{26}$

☐ B. Cannot compare

☐ C. They are equal

☐ D. $\sqrt{27}$

3) If $g(x) = x^2 + 2$ and $g(x) = 11$, find the possible values of x .

4) A circular garden has radius 2 meters. Using $\pi \approx 3.14$, which is the best estimate of the circumference?

☐ A. 6.28 m

☐ B. 25.12 m

☐ C. 12.8 m

☐ D. 12.56 m

5) The radius of Jupiter is about 7.14×10^7 m. What is this in standard form?

☐ A. 714,000 m

☐ B. 7,140,000,000 m

☐ C. 714,000,000 m

☐ D. 71,400,000 m

6) Two students claim different answers for $0.\overline{9}$. Student A says $\frac{9}{9} = 1$. Student B says $\frac{9}{10}$. Who is correct and why?

☐ A. Student A is correct; $0.\overline{9} = 1$.

☐ B. Student B is correct; $0.\overline{9} = 0.9$.

☐ C. Both are incorrect; the answer is $\frac{8}{9}$.

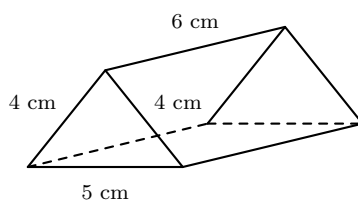
☐ D. They are equal, so both are correct.



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- 7) Two similar triangles have corresponding sides in the ratio $2 : 7$. The smaller triangle has a side of 6 cm. Find the length of the corresponding side in the larger triangle.

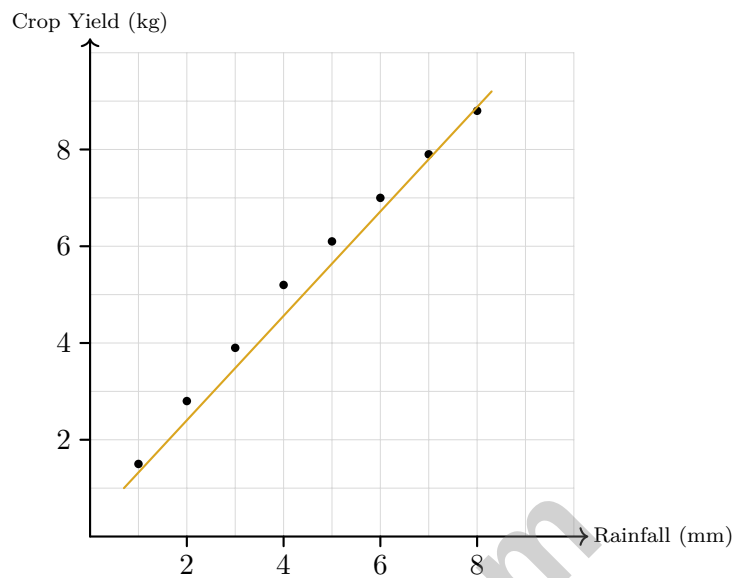


8)

A triangular prism has a triangular base with sides 5 cm, 4 cm, and 4 cm. The height (length) of the prism is 6 cm. The height of the triangle is approximately 3.1 cm. What is the total surface area?

- ☐ A. 72.4 cm^2
☐ C. 96.8 cm^2
☐ B. 84.8 cm^2
☐ D. 93.5 cm^2
- 9) What is the slope of a line passing through $(-1, 4)$ and $(2, -2)$?
- ☐ A. 2
 ☐ C. 3
☐ B. $-\frac{1}{2}$
☐ D. -2
- 10) Solve for x : $5(x - 2) = 3(x + 2)$
- ☐ A. $x = 8$
☐ C. $x = 1$
☐ B. $x = -8$
☐ D. $x = 10$





1)

In a study of rainfall and crop yield, the trend line shows a positive relationship. How much would yield increase for every 1 mm increase in rainfall?

- ☐ A. Between 1 and 2 kg ☐ C. Between 2 and 3 kg
☐ B. Less than 1 kg ☐ D. More than 3 kg

2) A student dilates a triangle with scale factor 2 and claims the new triangle's perimeter is twice the original. Is this correct?

- ☐ A. No, the perimeter is multiplied by 4 ☐ C. No, the area is multiplied by 2
☐ B. Yes, linear measurements scale by 2 ☐ D. Only if the triangle is equilateral



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& answers

3) The table shows values of function p :

x	-2	0	2	4
$p(x)$	3	7	11	15

If the pattern continues, what is $p(6)$?

☐ A. 17

☐ C. 20

☐ B. 19

☐ D. 22

4) If x is a whole number and $\sqrt{x}$ is rational, then x must be:

☐ A. Irrational

☐ C. A perfect square

☐ B. Odd

☐ D. Greater than 10



5)

Which value belongs at the red mark on the number line?

☐ A. $\sqrt{9}$

☐ C. $\sqrt{16}$

☐ B. $\sqrt{20}$

☐ D. $\sqrt{12}$

6) 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



Florida FAST 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 Florida FAST practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (MA.8.AR.2.1) 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.)
- 2) **Choice C is correct.** (MA.8.GR.2.3) Original: $SA = 2(6 + 8 + 12) = 52 \text{ m}^2$. Scaled: $SA = 2(24 + 32 + 48) = 208 \text{ m}^2$. Ratio: $208/52 = 4$. When dimensions scale by $k = 2$, surface area scales by $k^2 = 4$.
- 3) **The correct answer is 0.00047.** (MA.8.NSO.1.4) Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 4) **The correct answer is $\frac{2}{9}$.** (MA.8.NSO.1.1) Set $x = 0.\overline{2}$, so $10x = 2.\overline{2}$. Subtracting: $10x - x = 2$, giving $9x = 2$ and $x = \frac{2}{9}$.
- 5) **Choice D is correct.** (MA.8.AR.3.5) Using $y = mx + b$: $3 = -1(1) + b$, so $3 = -1 + b$, thus $b = 4$.
- 6) **Choice C is correct.** (MA.8.AR.2.2) When dividing (or multiplying) both sides of an inequality by a negative number, the inequality symbol must flip to preserve the truth of the statement. For example, if $2 > 1$ (true), multiplying by -1 gives $-2 > -1$ (false), so we flip to get $-2 < -1$ (true).
- 7) **Choice C is correct.** (MA.8.AR.4.2) SOLID line (includes boundary) and shading ABOVE indicate $y \geq 1.5x$.
- 8) **Choice A is correct.** (MA.8.GR.2.3) 270° counterclockwise equals 90° clockwise, using the rule $(x, y) \rightarrow (y, -x)$. Distractor B is 90° counterclockwise.
- 9) **Choice B is correct.** (MA.8.GR.1.5) Sphere: $V_s = \frac{4}{3}\pi r^3$. Cylinder: $V_c = \pi r^2(2r) = 2\pi r^3$. Ratio: $\frac{V_c}{V_s} = \frac{2\pi r^3}{\frac{4}{3}\pi r^3} = \frac{2 \times 3}{4} = 1.5$.
- 10) **The correct answer is 9.4.** (MA.8.NSO.1.2) The side length is $\sqrt{88}$. Since $9^2 = 81$ and $10^2 = 100$, and 88 is closer to 81, we estimate $\sqrt{88} \approx 9.38 \approx 9.4$.
- 11) **Choice B is correct.** (MA.8.DP.1.3) Negative slope means as one variable increases, the other decreases. More training leads to fewer errors.
- 12) **Choice C is correct.** (MA.8.AR.3.5) Interest: $I = 1200 \times 0.08 \times 2 = \192 . Total: $A = 1200 + 192 = \$1,392$.
- 13) **Choice D is correct.** (MA.8.AR.1.1) Apply product rule: $7^{-4} \cdot 7^6 = 7^{-4+6} = 7^2$.
- 14) **Choice C is correct.** (MA.8.NSO.1.7) $18 \times 18 = 324$, so $\sqrt{324} = 18$.
- 15) **Choice C is correct.** (MA.8.NSO.1.5) Divide: $\frac{2 \times 10^{12}}{4 \times 10^{12}} = \frac{2}{4} \times 10^0 = 0.5 \times 10^0 = 0.5$ kilotons.
- 16) **The correct answer is 4.9.** (MA.8.NSO.1.2) $\sqrt{6} \times \sqrt{4} = \sqrt{24} = 2\sqrt{6} \approx 2 \times 2.45 = 4.90$.
- 17) **Choice C is correct.** (MA.8.AR.3.1) Unit rate $k = \frac{110}{2} = 55$ miles per hour. The proportional equation is $d = 55t$.
- 18) **Choice C is correct.** (MA.8.AR.4.2) The marked point where the two lines meet is $(2, -2)$, so that ordered pair is the solution.
- 19) **The correct answer is A,C.** (MA.8.NSO.1.1) $\sqrt{169} = 13$ is rational (perfect square). The repeating decimal $0.777\ldots = \frac{7}{9}$ is rational. The other values are irrational: $\sqrt{170}$ (non-perfect square), 2π (irrational multiple of π), and $\sqrt{2} + 1$ (irrational plus rational is irrational).
- 20) **Choice B is correct.** (MA.8.F.1.1) The parabola opens upward and any vertical line intersects it at most once (or once in the visible region shown). This confirms it is a function.
- 21) **Choice A is correct.** (MA.8.F.1.2) $S_1(4) = 80$. S_2 slope: $(56 - 50)/1 = 6$, so $S_2(4) = 50 + 6(4) = 74$. Since $80 > 74$, S_1 has more.
- 22) **Choice B is correct.** (MA.8.F.1.2) $y = \frac{3}{4}x + 2$ perfectly matches the linear form $y = mx + b$ with $m = \frac{3}{4}$ and $b = 2$. Fractional slopes do not make a function nonlinear.
- 23) **Choice C is correct.** (MA.8.AR.3.5) Proportional functions have form $y = mx$ (intercept = 0). Option C has intercept 1, so it is not proportional.
- 24) **Choice B is correct.** (MA.8.F.1.3) The y -intercept (at $x = 0$) is 1, so the student has \$1 initially. From 0 to 3 weeks, the graph rises linearly from 1 to 4, a gain of \$1 per week. From week 3 to 6, the graph is flat at 4, so no additional savings.
- 25) **Choice A is correct.** (MA.8.GR.2.3) Reflecting across the x -axis maps $(1, 2) \rightarrow (1, -2)$. Translating right 1 and up 1 gives $(2, -1)$, which is a vertex of the image. Checking the other vertices shows the same rule maps the whole rectangle correctly.



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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.

testinar.com/math8

PRACTICE. PREPARE. SUCCEED.



Testinar

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