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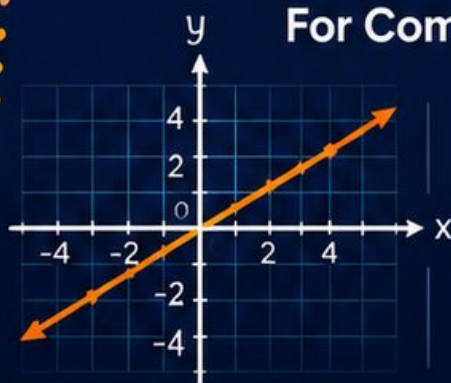
Florida FAST

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$A = \pi r^2$$

$$C = 2\pi r$$

$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}b^2 h$$



8

 PRINTED
TESTS

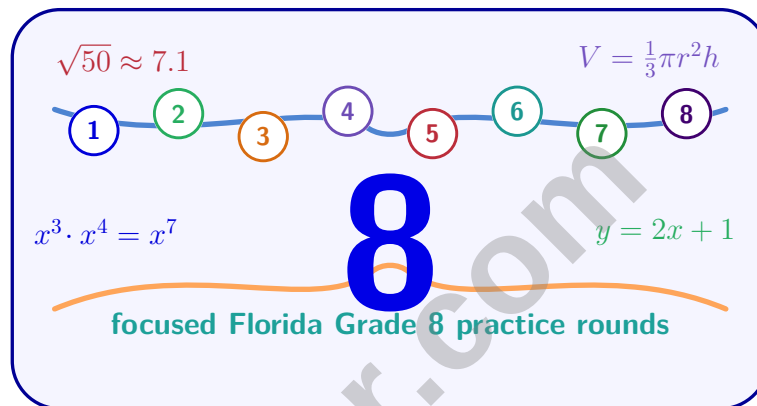
2

 ONLINE
TESTS

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

8 Florida FAST Grade 8 Math Practice Tests

FAST-Aligned Florida Practice for Functions, Geometry, and Data



Eight 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!

Eight focused rounds for sharper FAST math thinking

This book gives you eight 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

An eight-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?

Eight FAST tests, 320 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 7–8	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.



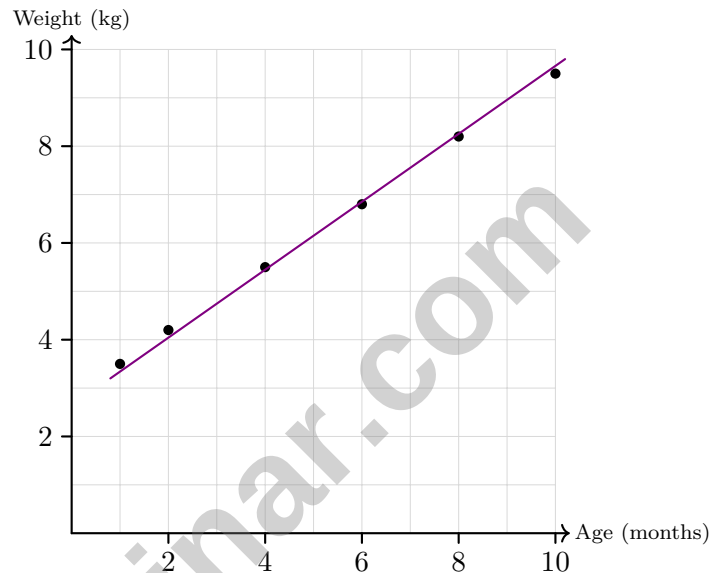
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1) If two groups of students both have mean score 80 but Group 1 MAD = 2 and Group 2 MAD = 10, which is true?

- ☐ A. Group 2 has higher overall achievement
☐ B. Group 1 has more students
☐ C. Group 1 scores are more uniform
☐ D. Both groups have identical scores



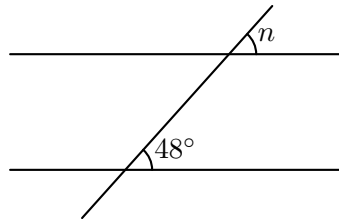
2)

An infant growth chart plots age in months versus weight in kg. If the trend line is $y = 0.65x + 2.5$, how much weight gain is predicted per month?

- ☐ A. 0.65 kg per month
☐ B. 0.50 kg per month
☐ C. 2.5 kg per month
☐ D. 3.15 kg per month



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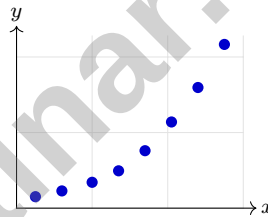


3)

Two parallel lines are cut by a transversal. One angle below the transversal measures 48° . What is n , the corresponding angle above the line?

☐ A. 42° ☐ C. 132° ☐ B. 48° ☐ D. 138°

4) In a regular hexagon, each interior angle measures:

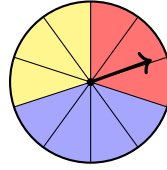
☐ A. 144° ☐ C. 90° ☐ B. 120° ☐ D. 108° 

5)

A scatter plot shows the population of a city over 50 years. The points follow an exponential growth curve: slow growth initially, then rapid growth. This is an example of:

☐ A. Nonlinear association☐ D. Positive linear correlation with outliers☐ B. Negative linear correlation☐ C. No correlation

- 6) A spinner has 10 equal sections: 3 red, 4 blue, and 3 yellow. What is the probability of landing on red OR blue?



3 red, 4 blue, 3 yellow

- ☐ A. $\frac{4}{10}$
☐ C. $\frac{7}{10}$
☐ B. $\frac{12}{10}$
☐ D. $\frac{3}{10}$
- 7) A car manufacturer offers 3 body styles, 5 paint colors, 4 interior designs, and 2 engine options. How many different car configurations are possible?
- ☐ A. $3 + 5 + 4 + 2 = 14$
☐ C. $(3 + 5 + 4 + 2)^2 = 196$
☐ B. $3 \times 5 \times 4 \times 2 = 120$
☐ D. $5^4 = 625$

Numbers

Rational

$\frac{1}{2}$, 0.5

Irrational

$\sqrt{2}$, π

8)

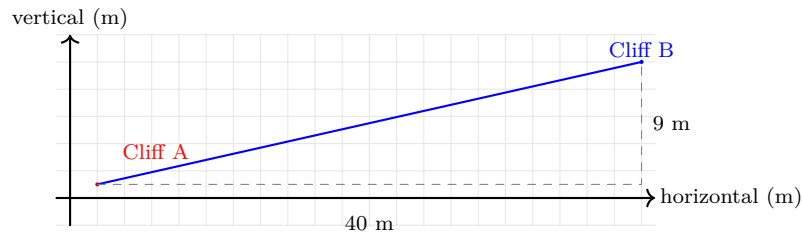
Which number should be placed in the Rational section?

- ☐ A. $\sqrt{13}$
☐ C. $-\frac{9}{2}$
☐ B. $2 + \sqrt{5}$
☐ D. $\sqrt{\pi}$



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- 1) A bridge connects two cliffs with horizontal separation 40 m and vertical separation 9 m. How long is the bridge?



- ☐ A. 49 m ☐ C. 41 m
☐ B. 31 m ☐ D. $\sqrt{1600}$ m
- 2) Which point is on the boundary line of $3x - y = 9$ but NOT in the solution region of $3x - y < 9$?
- ☐ A. (3, 0) ☐ C. (1, 6)
☐ B. (0, 9) ☐ D. (2, 1)
- 3) The elevation rises 500 feet over a horizontal distance of 2000 feet. What is the slope?

- 4) What is the domain of the relation $\{(1, 2), (3, 4), (5, 6), (7, 8)\}$?

- ☐ A. $\{2, 4, 6, 8\}$ ☐ C. $\{1, 2, 3, 4, 5, 6, 7, 8\}$
☐ B. $\{1, 3, 5, 7\}$ ☐ D. $\{3, 6, 9, 12\}$



- 5) A rectangle has length ℓ and fixed width 5. Which equation expresses area A as a function of length?
- ☐ A. $A = 5\ell$ ☐ C. $A = 10\ell + 5$
☐ B. $A = \ell(10 - \ell)$ ☐ D. $A = \ell^2$
- 6) A residual is the vertical distance between a data point and the trend line. Which set of residuals indicates the BEST fit?
- ☐ A. Residuals of 15, -12, 18, -14, 20 ☐ C. Residuals of -20, -18, 22, 25, 19
☐ B. Residuals of -1, 0, 1, 0, -1 ☐ D. Residuals of -5, -4, 3, 4, 2
- 7) If $f(x) = \frac{x+4}{2}$ and $f(x) = 5$, what is x ?
- ☐ A. 2 ☐ C. 6
☐ B. 4 ☐ D. 10
- 8) A trapezoid is transformed by rotating it 90° counterclockwise about the origin. If a vertex was at $(3, -2)$ before the rotation, where is it after?
- ☐ A. $(3, 2)$ ☐ C. $(2, 3)$
☐ B. $(-3, -2)$ ☐ D. $(-2, 3)$
- 9) Three cones have the same height $h = 5$ cm but different radii: $r_1 = 2$ cm, $r_2 = 3$ cm, $r_3 = 4$ cm. Which lists their volumes in order from smallest to largest? (Use $\pi \approx 3.14$.)
- ☐ A. r_1, r_2, r_3 ☐ D. Cannot be ordered without computing
☐ B. r_3, r_2, r_1
☐ C. All equal volume



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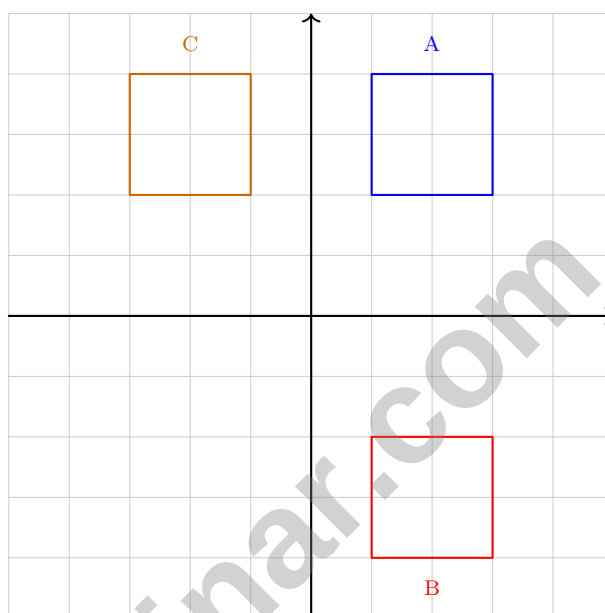
1) A student has 6 different books and wants to arrange all of them on a shelf. How many arrangements are possible?

☐ A. $6 + 5 + 4 + 3 + 2 + 1 = 21$

☐ C. $6! = 720$

☐ B. $6^6 = 46,656$

☐ D. $\binom{6}{6} = 1$



2)

Which statement is true about these three rectangles?

- | | |
|--|---|
| ☐ A. A and B are related by a reflection;
A and C are related by a translation | ☐ C. A and B are related by a dilation;
A and C are related by a reflection |
| ☐ B. A and B are related by a translation;
A and C are related by a reflection | ☐ D. All three are related by translations only |



- 3) Simplify $\frac{x^{10} \cdot x^{-3}}{x^4}$. What is the exponent on x in the final answer?

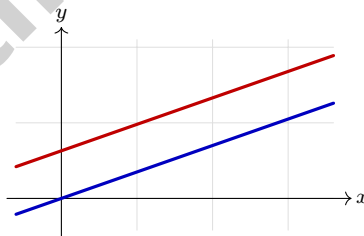
- 4) A student reads 25 pages of a book per day. How many days to read 200 pages? (Proportional relationship.)

- ☐ A. 5 days ☐ C. 7 days
☐ B. 6 days ☐ D. 8 days

- 5) Solve for y : $\frac{y-3}{2} = 5$

- ☐ A. $y = 13$ ☐ C. $y = 4$
☐ B. $y = 7$ ☐ D. $y = 10$

- 6) Two lines on a graph do not intersect and are not the same line. How many solutions does the system have?



- ☐ A. No solution ☐ C. Exactly two solutions
☐ B. Exactly one solution ☐ D. Infinitely many solutions



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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.GR.1.2)** Group 1's smaller MAD (2) shows less spread and more consistent performance. Group 2's larger MAD (10) indicates greater variability in scores.
- 2) **Choice A is correct.** **(MA.8.DP.1.3)** The slope of the line $y = 0.65x + 2.5$ is 0.65, representing the predicted weight gain per month.
- 3) **Choice B is correct.** **(MA.8.GR.1.4)** Corresponding angles formed by a transversal cutting parallel lines are congruent. So $n = 48^\circ$.
- 4) **Choice B is correct.** **(MA.8.GR.1.6)** The sum for a hexagon is $(6 - 2) \times 180 = 720^\circ$. Each angle is $\frac{720}{6} = 120^\circ$.
- 5) **Choice A is correct.** **(MA.8.DP.1.1)** An exponential curve is nonlinear. The rate of change is not constant, increasing over time.
- 6) **Choice C is correct.** **(MA.8.DP.2.1)** $P(\text{red or blue}) = P(\text{red}) + P(\text{blue}) = \frac{3}{10} + \frac{4}{10} = \frac{7}{10}$.
- 7) **Choice B is correct.** **(MA.8.AR.2.1)** Multiply independent choices: 3 styles $\times$ 5 colors $\times$ 4 designs $\times$ 2 engines = 120 configurations.
- 8) **Choice C is correct.** **(MA.8.NSO.1.1)** Only $-\frac{9}{2}$ is rational (a fraction of two integers). The others are irrational: $\sqrt{13}$ is a non-perfect-square root, $2 + \sqrt{5}$ is a sum involving an irrational, and $\sqrt{\pi}$ is the root of an irrational.
- 9) **Choice D is correct.** **(MA.8.NSO.1.1)** Let $x = 0.4\bar{2} = 0.4222\dots$. Then $10x = 4.\bar{2}$ and $100x = 42.\bar{2}$. Subtracting: $90x = 38$, so $x = \frac{38}{90} = \frac{19}{45}$.
- 10) **Choice D is correct.** **(MA.8.NSO.1.2)** $5^2 = 25$ and $6^2 = 36$. The midpoint is $(5.5)^2 = 30.25$. Since $30 < 30.25$, we have $\sqrt{30} < 5.5$, so it rounds to 5.
- 11) **Choice D is correct.** **(MA.8.NSO.1.4)** $57,000 = 5.7 \times 10^4$ (move decimal 4 places left from 57,000 to get 5.7).
- 12) **Choice C is correct.** **(MA.8.AR.3.5)** Rewrite in slope-intercept form: $2y = -x + 8$, so $y = -\frac{1}{2}x + 4$. The slope is $-\frac{1}{2}$.
- 13) **Choice C is correct.** **(MA.8.AR.2.2)** Dividing by -6 requires flipping: $x \leq 4$, not $x \geq 4$.
- 14) **Choice C is correct.** **(MA.8.NSO.1.2)** $\pi \approx 3.14$ and $\sqrt{2} \approx 1.41$, so $3.14 \times 1.41 \approx 4.43$.
- 15) **Choice C is correct.** **(MA.8.AR.1.1)** Apply power to numerator and denominator: $\left(\frac{x}{y}\right)^2 = \frac{x^2}{y^2}$.
- 16) **Choice D is correct.** **(MA.8.AR.3.1)** $k = \frac{y}{x} = \frac{9}{2}$. The line passes through origin and $(2, 9)$.
- 17) **Choice A is correct.** **(MA.8.AR.2.1)** Subtract $4x$ and add 12: $4x = 20$. Divide by 4: $x = 5$.
- 18) **Choice C is correct.** **(MA.8.AR.4.2)** For a system to have no solution, the lines must be parallel. This requires the same slope but different y -intercepts.
- 19) **The correct answer is B,E.** **(MA.8.AR.3.5)** Option B is correct because the constant term 35 is the fixed monthly cost. Option E is correct because at $t = 0$, $C = 0.10(0) + 35 = 35$. The slope is 0.10, so the cost per text is \$0.10, not \$0.35.
- 20) **Choice A is correct.** **(MA.8.GR.1.6)** Circle area $= \pi r^2 = 3.14 \times 7^2 = 153.86 \text{ m}^2$. Square area $= 4 \times 4 = 16 \text{ m}^2$. Remaining $= 153.86 - 16 = 137.86 \text{ m}^2$.
- 21) **Choice A is correct.** **(MA.8.AR.3.5)** Interest costs: A: \$240 (total \$2,240); B: \$320 (total \$2,320); C: \$360 (total \$2,360); D: \$320 (total \$2,320). Option A has the lowest total cost.
- 22) **The correct answer is 90.** **(MA.8.GR.1.5)** Let the angles be x , $2x$, and $3x$. Sum: $x + 2x + 3x = 180 \implies 6x = 180 \implies x = 30^\circ$. Largest angle: $3x = 90^\circ$.
- 23) **Choice D is correct.** **(MA.8.NSO.1.7)** $\sqrt{40}$ is irrational because 40 is not a perfect square. The others equal 5, 10, and 12 respectively.
- 24) **The correct answer is 10.** **(MA.8.GR.1.2)** $d = \sqrt{(5 - (-3))^2 + (-2 - 4)^2} = \sqrt{8^2 + (-6)^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ units.
- 25) **Choice C is correct.** **(MA.8.NSO.1.5)** Numerator: $(4 \times 3) \times 10^{6+2} = 12 \times 10^8$. Then divide: $\frac{12 \times 10^8}{6 \times 10^4} = 2 \times 10^4$.
- 26) **Choice C is correct.** **(MA.8.AR.1.2)** GCF is 5: $5x^2 + 35x + 50 = 5(x^2 + 7x + 10) = 5(x + 2)(x + 5)$.
- 27) **Choice A is correct.** **(MA.8.F.1.2)** $A(4) = 2(4) = 8$. $B(4) = 1(4) - 3 = 1$. Since $8 > 1$, Line A is higher.



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◇ Grade 8 practice builds a bridge to high school mathematics through exponents, linear systems, functions, transformations, geometry, and data models. This wide-ranging book gave you eight serious Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** Every time you solved for an unknown or explained a relationship, you were building skills that future math will use again. ★

Bridge Skills

- **Use Variables:** Let letters stand for unknown values.
- **Balance Equations:** Keep both sides fair.
- **Read Graphs:** Connect points to meaning.
- **Compare Rates:** Look for constant relationships.

Grade 8 test-day tip: When you see a variable, say what it represents. That keeps algebra connected to the problem.

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

Jay Daie

Your Algebra Bridge Coach

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Questions designed to cover essential Grade 8 math standards.



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Multiple-choice, short answer, and more to build well-rounded skills.



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Engaging problems that connect math to everyday life.



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Track improvement and build confidence with every test.



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Strengthen understanding and feel prepared for test day.



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- ✓ Linear Equations
- ✓ Functions
- ✓ Geometry
- ✓ Measurement & Data
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