

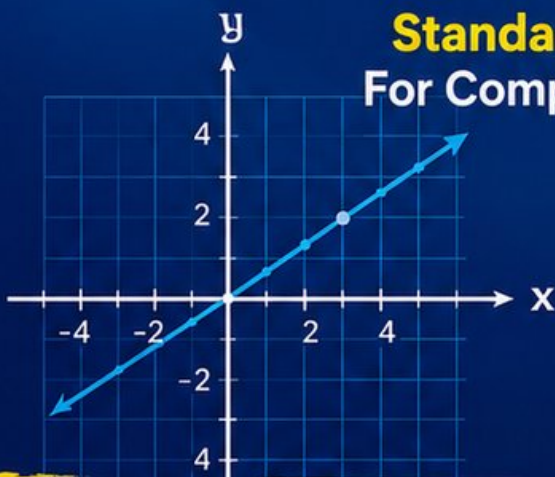
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Arizona
AASA

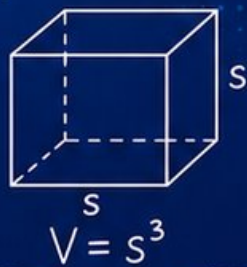
Grade 8

MATH

PRACTICE TESTS

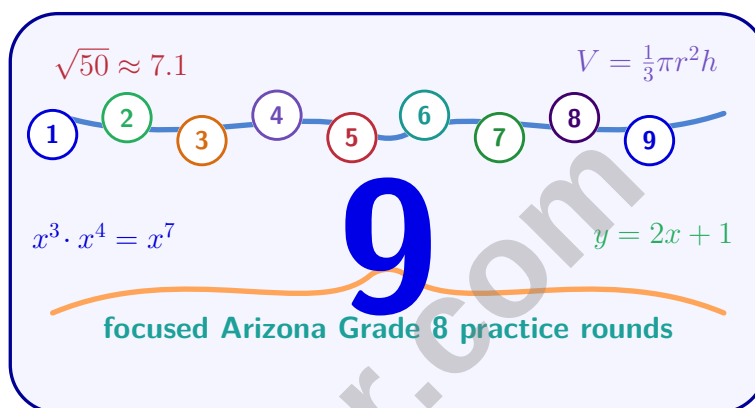
Standards Aligned Problem Solving
For Comprehensive Assessment Programs

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

9 PRINTED
TESTS2 ONLINE
TESTSUse these **two additional online practice tests** for extra review after the printed tests in this book.

9 Arizona AASA Grade 8 Math Practice Tests

Arizona Grade 8 Math Practice for Equations, Graphs, Geometry, and Data Skills



Nine complete 40-question Grade 8 AASA 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, Arizona Grade 8 Problem Solver!

Nine focused rounds for sharper AASA math thinking

This book gives you nine full Grade 8 AASA 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 Arizona 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.

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

☐ A. $y = 13$

☐ B. $y = 7$

☐ C. $y = 4$

☐ D. $y = 10$

2) Is $\sqrt{7} + 2$ greater than, less than, or equal to 4.6?

☐ A. Cannot be determined

☐ B. Less than 4.6

☐ C. Exactly 4.6

☐ D. Greater than 4.6

3) Two congruent triangles are positioned as shown. Triangle A is at vertices (1, 1), (3, 1), (2, 3). Triangle B is at vertices (1, -1), (3, -1), (2, -3). What transformation(s) map A to B?

☐ A. A single reflection across the x -axis

☐ B. A single reflection across the y -axis

☐ C. A reflection across the x -axis followed by a reflection across the y -axis

☐ D. A single translation downward

4) Solve: $3x + 2 \geq -4$

☐ A. $x \geq -2$

☐ B. $x \leq -2$

☐ C. $x \geq 2$

☐ D. $x \leq 2$

5) Test the point (0, 0) in the inequality $y > x - 3$. Is it in the solution region?

☐ A. Yes, because $0 > -3$

☐ B. Yes, because $0 = 0$

☐ C. No, because $0 < -3$

☐ D. No, because $0 = -3$



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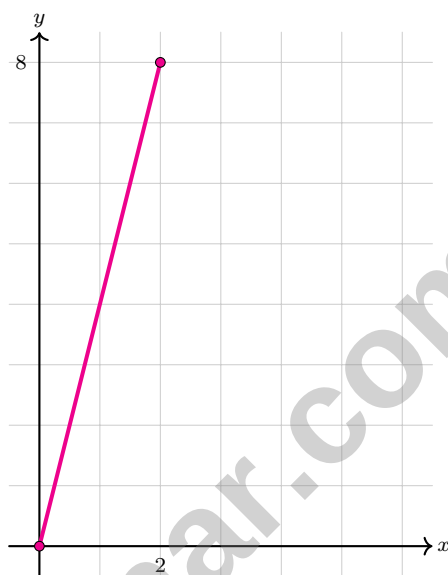
6) A mortgage for \$200,000 at 4% simple interest over 30 years. What is the total interest paid?

☐ A. \$80,000

☐ C. \$160,000

☐ B. \$120,000

☐ D. \$240,000



7)

Which equation represents this line?

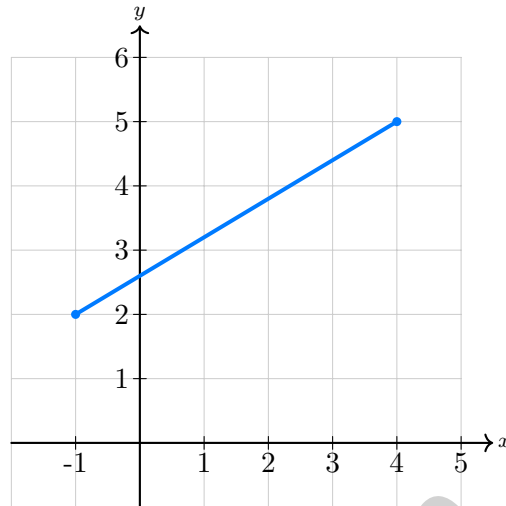
☐ A. $y = 2x$

☐ C. $y = 6x$

☐ B. $y = 8x$

☐ D. $y = 4x$





8)

Using the two points marked, which equation represents this line?

☐ A. $y = \frac{3}{5}x + \frac{13}{5}$

☐ C. $y = 3x + 5$

☐ B. $y = \frac{3}{5}x + 3$

☐ D. $y = \frac{2}{3}x + \frac{8}{3}$

- 9) In a two-way table of 320 households, 192 have children and 128 do not. Among those with children, 144 have both children and pets. What is the joint relative frequency of households with both children and pets? Express as a decimal rounded to the nearest hundredth.

	Children and pets	Total
Children	144	192
No children	—	128
All households	—	320



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- 1) A school is electing a president, vice-president, and treasurer from 9 candidates. How many ways can these positions be filled?

☐ A. $9 + 8 + 7 = 24$

☐ B. $9 \times 8 \times 7 = 504$

☐ C. $\binom{9}{3} = 84$

☐ D. $9^3 = 729$

- 2) Of 320 patients at a clinic, 200 were prescribed medication and 120 were not. Among those prescribed medication, 160 showed improvement. What is the relative frequency of patients showing improvement among those prescribed medication?

☐ A. 0.50

☐ B. 0.80

☐ C. 0.67

☐ D. 0.75

- 3) Use the table to find the value of x if $f(x) = 7$.

x	0	1	2	3
$f(x)$	1	3	5	7

- 4) If each interior angle of a regular polygon is 150° , how many sides does it have?

☐ A. 11

☐ B. 12

☐ C. 13

☐ D. 14



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5) Two supplementary angles are in the ratio 4 : 11. Find the measure of the smaller angle.

☐ A. 20°

☐ C. 55°

☐ B. 40°

☐ D. 48°

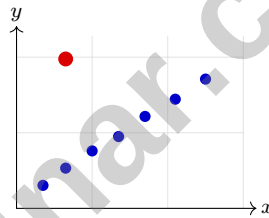
6) A student wants to find the volume of a triangular pyramid with a right-triangular base (legs 6 cm and 8 cm) and height 10 cm. The student calculates $V = \frac{1}{3} \times (6 \times 8) \times 10 = 160 \text{ cm}^3$. What is the error?

☐ A. The student used the wrong formula.

☐ C. The student should not have included the $\frac{1}{3}$ factor.

☐ B. The student forgot to divide the triangle base by 2.

☐ D. The height is incorrect.



7)

A scatter plot displays student class attendance versus final exam grade. The data shows a positive linear association with a strong correlation. One student attended class 80% of the time but scored a 40% on the exam. This point is:

☐ A. An outlier

☐ C. The mean of the data

☐ B. A typical data point

☐ D. An error in measurement



1) The number of stars in the observable universe is estimated at 10^{24} . Which is closest to this value?

☐ A. 1 trillion

☐ C. 1 quadrillion

☐ B. 1 sextillion

☐ D. 1 septillion

2) Two rectangular prisms have the same volume of 120 cm^3 . Prism A has dimensions $10 \times 6 \times 2 \text{ cm}$. Prism B has dimensions $8 \times 5 \times 3 \text{ cm}$. Which prism has the greater surface area?

☐ A. Prism A with $SA = 184 \text{ cm}^2$

☐ C. Prism B with $SA = 158 \text{ cm}^2$

☐ B. Prism A with $SA = 244 \text{ cm}^2$

☐ D. Prism B with $SA = 206 \text{ cm}^2$

3) A cone has a volume of 314 cm^3 and height of 12 cm . What is its radius? (Use $\pi \approx 3.14$.)

☐ A. 3 cm

☐ C. 5 cm

☐ B. 4 cm

☐ D. 6 cm

4) Table: $(0, 3)$, $(1, 1)$, $(2, -1)$, $(3, -3)$. Rate of change is?

x	0	1	2	3
y	3	1	-1	-3

☐ A. -2

☐ C. 1

☐ B. -1

☐ D. 2



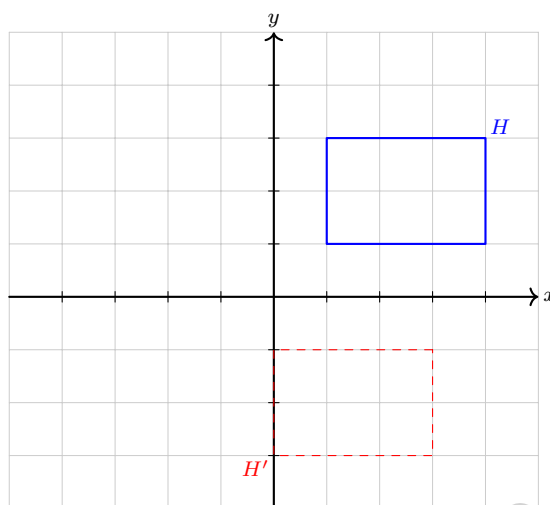
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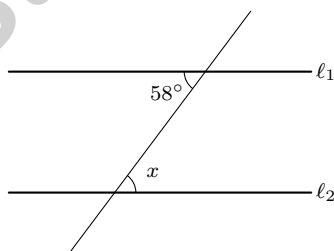


5)

Rectangle H (blue) is transformed to rectangle H' (red). Which sequence of transformations applies?

- ☐ A. Reflect across y -axis, translate right 3
☐ B. Rotate 180° about the origin, translate right 3
☐ C. Reflect across x -axis, translate left 1
☐ D. Translate down 4, reflect across y -axis

6) In the diagram, lines ℓ_1 and ℓ_2 are parallel. Find the measure of angle x .



- ☐ A. 58°
☐ B. 68°
☐ C. 122°
☐ D. 180°



Arizona AASA 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 Arizona AASA practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (8.EE.C.7) Multiply by 2: $y - 3 = 10$. Add 3: $y = 13$.
- 2) **Choice D is correct.** (8.NS.A.2) $\sqrt{7} \approx 2.646$, so $\sqrt{7} + 2 \approx 4.646 > 4.6$.
- 3) **Choice A is correct.** (8.G.A.1) Reflecting A across the x -axis maps $(x, y) \rightarrow (x, -y)$: $(1, 1) \rightarrow (1, -1)$, $(3, 1) \rightarrow (3, -1)$, $(2, 3) \rightarrow (2, -3)$, giving B exactly.
- 4) **Choice A is correct.** (8.EE.C.7) Subtract 2: $3x \geq -6$. Divide by 3: $x \geq -2$.
- 5) **Choice A is correct.** (8.G.B.8) Substitute: $0 > 0 - 3 \Rightarrow 0 > -3$ TRUE. So $(0, 0)$ is in the solution region.
- 6) **Choice D is correct.** (8.G.B.7) Interest: $I = 200000 \times 0.04 \times 30 = \$240,000$.
- 7) **Choice D is correct.** (8.EE.B.5) Slope $k = \frac{8}{2} = 4$. The equation is $y = 4x$.
- 8) **Choice A is correct.** (8.EE.B.6) Slope = $\frac{5-2}{4-(-1)} = \frac{3}{5}$. Using $(-1, 2)$: $2 = \frac{3}{5}(-1) + b$ gives $b = \frac{13}{5}$.
- 9) **The correct answer is 0.45.** (8.SP.A.4) Joint relative frequency: $\frac{144}{320} = 0.45$.
- 10) **Choice C is correct.** (8.EE.C) Add the equations: $(x + 2y) + (3x - 2y) = 10 + 2$, so $4x = 12$, giving $x = 3$. Substitute: $3 + 2y = 10$, so $2y = 7$ and $y = \frac{7}{2}$. Solution: $(3, \frac{7}{2})$.
- 11) **Choice A is correct.** (8.F.A.3) Slope = $\frac{11-5}{4-2} = \frac{6}{2} = 3$.
- 12) **Choice D is correct.** (8.F.B.5) From $x = 0$ to $x = 3$, the function values drop from 5 to 2, so the function is decreasing over this interval.
- 13) **Choice B is correct.** (8.G.A.3) The point $(1, 1)$ maps to $(-1, 1)$, and $(2, 2)$ maps to $(-2, 2)$. This is reflection across the y -axis: $(x, y) \rightarrow (-x, y)$.
- 14) **Choice D is correct.** (8.G.A.5) Exterior angle equals the sum of remote interior angles: $55 + 64 = 119^\circ$.
- 15) **The correct answer is 3.33×10^5 .** (8.EE.A.3) Divide: $\frac{2 \times 10^{30}}{6 \times 10^{24}} = \frac{2}{6} \times 10^6 = \frac{1}{3} \times 10^6 \approx 3.33 \times 10^5$.
- 16) **The correct answer is $\frac{5}{11}$.** (8.NS.A.1) Let $x = 0.454545 \dots$. Then $100x = 45.454545 \dots$, so $99x = 45$ and $x = \frac{45}{99} = \frac{5}{11}$.
- 17) **Choice C is correct.** (8.G.B.8) Absolute deviations: $|10 - 13| = 3$, $|12 - 13| = 1$, $|14 - 13| = 1$, $|16 - 13| = 3$. Sum = 8. MAD = $8/4 = 2$.
- 18) **Choice D is correct.** (8.EE.A.1) $(k^2)^3 = k^6$; then $k^6 \cdot k^{-1} = k^5$; then $\frac{k^5}{k^5} = k^0 = 1$.
- 19) **Choice D is correct.** (8.EE.A.2) If the area is 169 square inches, then $s^2 = 169$, so $s = \sqrt{169} = 13$ inches.
- 20) **Choice D is correct.** (8.EE.A.4) Multiply coefficients: $8 \times 9 = 72 = 7.2 \times 10^1$. Add exponents: $10^{4+5} = 10^9$. Combine: $7.2 \times 10^1 \times 10^9 = 7.2 \times 10^{10}$.
- 21) **The correct answer is A, C.** (8.G.B.6, 8.G.B.7) A: $6^2 + 8^2 = 36 + 64 = 100 = 10^2$ ✓. C: $8^2 + 15^2 = 64 + 225 = 289 = 17^2$ ✓. B: $49 + 64 = 113 \neq 81$. D: $100 + 225 = 325 \neq 400$. E: $25 + 49 = 74 \neq 81$.
- 22) **Choice A is correct.** (8.EE.C.7) Find two numbers that multiply to -36 and add to 5: 9 and -4 . Verify: $9 \cdot (-4) = -36$ and $9 - 4 = 5$.
- 23) **Choice B is correct.** (8.F.A.1) Option B: every real input x has exactly one real cube root. Option A (circle): fails VLT. Option C: every positive x gives two y -values ($\pm x$). Option D: every positive x gives two outputs.
- 24) **Choice B is correct.** (8.F.A.2) $I_X(12) = 0.8(12) = 9.60$ dollars. Slope of Y: $(10 - 0)/12 \approx 0.833$ per month, so $I_Y(12) = 10$ dollars. Since $10 > 9.60$, Account Y earns more.
- 25) **Choice A is correct.** (8.F.B.4) Slope is $m = \frac{212-32}{100-0} = \frac{180}{100} = 1.8$. Be careful to use change in F over change in C .
- 26) **Choice B is correct.** (8.G.A.2) Both reflection and translation are rigid motions that preserve area. The final shape is congruent to the original, so it has the same area: 24 square units.
- 27) **Choice B is correct.** (8.G.B.7) Rectangle area = $6 \times 5 = 30 \text{ m}^2$. Triangle area = $\frac{1}{2} \times 6 \times 2 = 6 \text{ m}^2$. Total = $30 + 6 = 36 \text{ m}^2$.
- 28) **Choice A is correct.** (8.EE.B.5) Using points $(1, 15)$ and $(2, 30)$: slope = $\frac{30-15}{2-1} = \frac{15}{1} = 15$ dollars per hour.



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Hi, Momentum Builder!

◇ Finishing a Grade 8 practice book is not a small thing. It means you practiced persistence, patience, and flexible problem solving. ◇

★ **Remember this:** Some questions were quick. Others probably made you stop and think. Both kinds helped you grow because practice turns effort into confidence. This version gave you 9 opportunities to rehearse test-day habits. ★

Momentum Habits

- **Start Clean:** Write down what the problem gives you.
- **Pick a Tool:** Use a table, model, equation, or graph.
- **Keep Moving:** Skip and return when needed.
- **Review Smart:** Study mistakes without judging yourself.

Grade 8 test-day tip: If a problem feels stuck, change tools. A graph, table, or sketch can make the same idea clearer.

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

Jay Daie

Your Math Momentum Partner

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.

With a wide variety of questions and real-world applications, this book builds the skills and confidence students need to achieve their best!



WHAT'S INSIDE?



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Questions designed to cover essential Grade 8 math standards.



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Strengthen understanding and feel prepared for test day.

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- | | |
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| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| ✓ Measurement & Data | ✓ And More! |



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Testinar

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