

Idaho ISAT

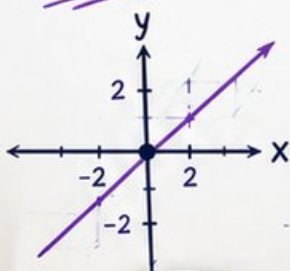
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

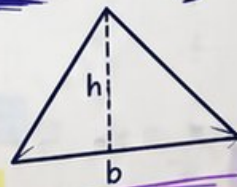
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



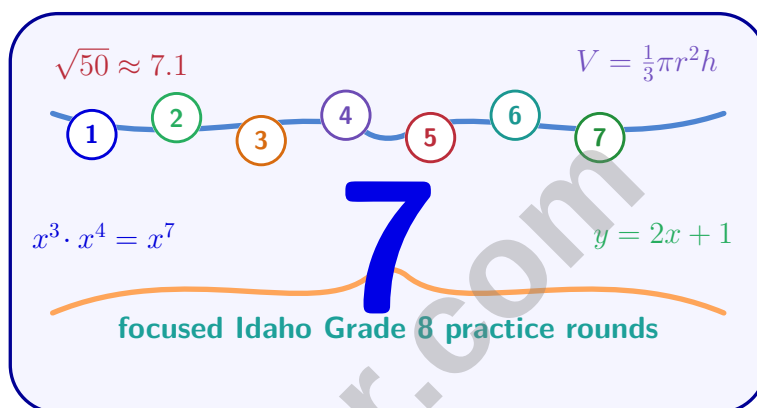
2 ONLINE
TESTS



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

7 Idaho ISAT Grade 8 Math Practice Tests

Smart Grade 8 ISAT Practice for Review, Stamina, and Accuracy



Seven complete 40-question Grade 8 ISAT 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, Idaho Grade 8 Problem Solver!

Seven focused rounds for sharper ISAT math thinking

This book gives you seven full Grade 8 ISAT 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 Idaho 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 seven-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.

Idaho 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?

Seven ISAT tests, 280 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.
Test 7	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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& answers

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1) The inequality $4x - y \geq 8$ is rewritten as $y \leq 4x - 8$. Which region should be shaded?

- ☐ A. Above the line with a dashed boundary ☐ C. Above the line with a solid boundary
- ☐ B. Below the line with a solid boundary ☐ D. Below the line with a dashed boundary

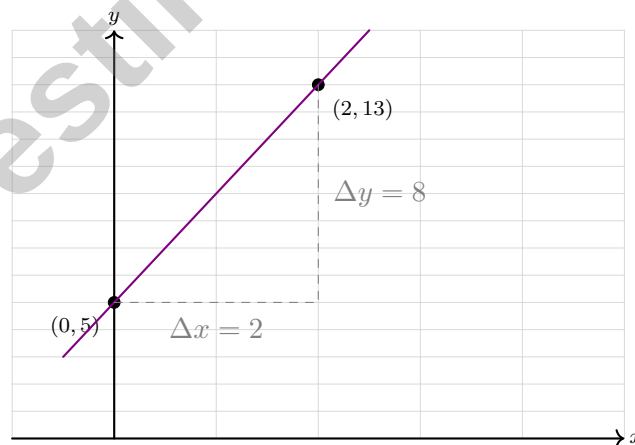
2) An online music streaming service charges per song. A listener downloads 8 songs for \$9.60. What is the cost per song?

- ☐ A. \$1.00 ☐ C. \$1.20
- ☐ B. \$1.10 ☐ D. \$1.30

3) Which system has infinitely many solutions?

- ☐ A. $y = x + 2$ and $y = x - 2$ ☐ C. $y = x + 2$ and $y = -x + 2$
- ☐ B. $y = x + 2$ and $y = 2x + 2$ ☐ D. $y = x + 2$ and $2y = 2x + 4$

4) A graph shows a line passing through $(0, 5)$ and $(2, 13)$. What is the equation of the line?

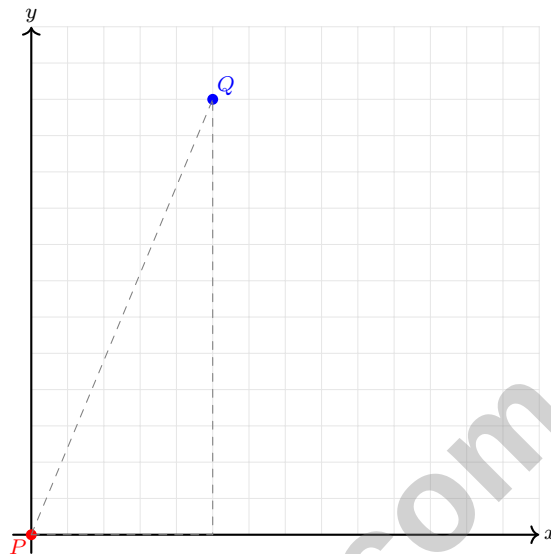


- ☐ A. $y = 4x + 5$ ☐ C. $y = 8x + 5$
- ☐ B. $y = 2x + 5$ ☐ D. $y = 4x + 13$



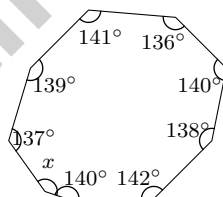
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- 5) Two points are plotted on a coordinate grid: $P = (0, 0)$ and $Q = (5, 12)$. What is the distance from P to Q rounded to the nearest tenth?



- ☐ A. 12.9 ☐ C. 17.0
☐ B. 13.0 ☐ D. 8.5

6)



A nonagon (9-sided polygon) has eight interior angles: $140^\circ, 142^\circ, 138^\circ, 140^\circ, 136^\circ, 141^\circ, 139^\circ, 137^\circ$. Find the ninth angle.

- ☐ A. 145° ☐ C. 150°
☐ B. 147° ☐ D. 152°



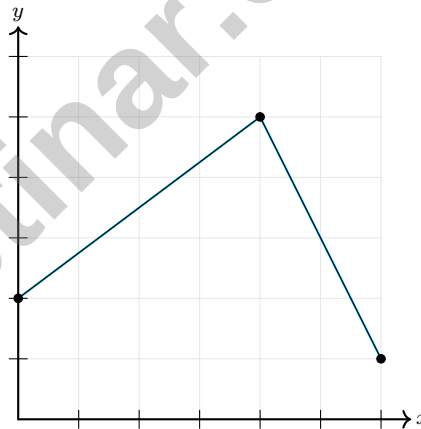
7) A scale factor of 0.75 applied to a figure means the new figure is:

- ☐ A. Larger than the original ☐ C. 25% of the original size
☐ B. 75% of the original size ☐ D. 75% larger than the original

8) Solve: $6 - 2x \geq -2$

- ☐ A. $x \leq 4$ ☐ C. $x \leq -4$
☐ B. $x \geq 4$ ☐ D. $x \geq -4$

9) Solve for x : $3(x + 2) - 5 = x + 7$. Show all steps and verify your solution.



10)

Which set of statements is true about the piecewise linear function?

- ☐ A. It increases from $x = 0$ to $x = 4$, decreases from $x = 4$ to $x = 6$, and has maximum value 5
☐ B. It has a zero at $x = 3$, decreases from $x = 4$ to $x = 6$, and has y -intercept 5
☐ C. It increases from $x = 0$ to $x = 6$, has maximum value 6, and has y -intercept 2
☐ D. It decreases from $x = 0$ to $x = 4$, has a zero at $x = 3$, and has maximum value 2



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1) A pizza costs \$12 for each large pizza. How much do 3.5 large pizzas cost?

☐ A. \$36

☐ C. \$42

☐ B. \$39

☐ D. \$45

2) What is the y -intercept of the line $y = 3x - 7$?

☐ A. -7

☐ C. 7

☐ B. 3

☐ D. -3

3) Solve for x : $\frac{2x}{3} = 8$

☐ A. $x = 12$

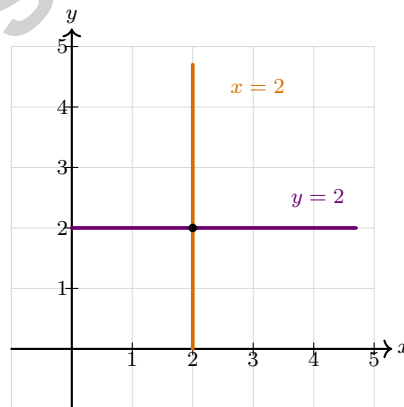
☐ C. $x = 24$

☐ B. $x = 16$

☐ D. $x = 6$

4) Evaluate $(x + 4)(x + 8)$ when $x = 1$.

5) Graph the two equations and identify what type of solution the system has.



☐ A. No solution

☐ C. Exactly one solution at $(2, 2)$

☐ B. Infinitely many solutions

☐ D. Two solutions



6) A line passes through $(2, 10)$ and has slope 3. What is the y -intercept?

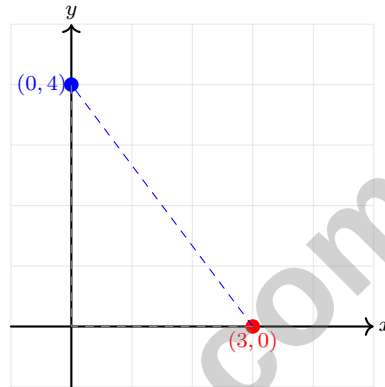
☐ A. 3

☐ C. 10

☐ B. 4

☐ D. 6

7) A student is finding the distance between points $(3, 0)$ and $(0, 4)$ and writes: $d = 3 + 4 = 7$. What is the error?



☐ A. They should square the differences before adding them.

☐ C. They forgot to take the square root.

☐ B. The answer is actually correct.

☐ D. They added instead of subtracting the coordinates.

8) A regular 30-sided polygon has each interior angle equal to:

☐ A. 150°

☐ C. 162°

☐ B. 156°

☐ D. 168°

9) A plant grows at a constant rate. After 2 weeks it is 8 inches tall. After 6 weeks it is 14 inches tall. What is the rate of growth per week (slope)?

☐ A. 1.5 inches per week

☐ C. 2 inches per week

☐ B. 3.5 inches per week

☐ D. 7 inches per week



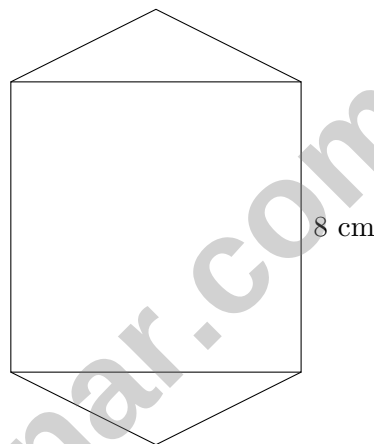
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- 1) An angle and its complement differ by 12° . What is the measure of the larger of the two angles?

☐ A. 39°
☐ C. 51°
☐ B. 45°
☐ D. 63°

- 2) A composite figure has a square base (8 cm by 8 cm) with triangular flaps on two opposite sides (base 8 cm, height 2 cm each). What is the total area in cm^2 ?

height 2 cm



- 3) A line of best fit for a data set is $y = 2x + 5$. What is the y -intercept, and what does it represent?

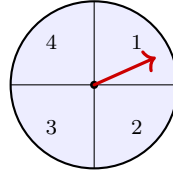
☐ A. The intercept is 2; it is the starting value

☐ C. The intercept is 7; it is the sum of slope and starting value

☐ B. The intercept is 5; it is the predicted value when $x = 0$
☐ D. The intercept is $2x$; it is the slope


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& answers

- 4) A spinner with 4 equal sections is spun twice. What is the probability of landing on section 1 at least once?



- ☐ A. $\frac{7}{16}$
☐ C. $\frac{1}{8}$
☐ B. $\frac{9}{16}$
☐ D. $\frac{1}{2}$
- 5) A library is awarding 3 different prizes to students: first place, second place, and third place. There are 8 students eligible. How many ways can the prizes be awarded?
- ☐ A. $8 \times 7 \times 6 = 336$
☐ C. $8^3 = 512$
☐ B. $\binom{8}{3} = 56$
☐ D. $8 + 7 + 6 = 21$
- 6) A vehicle loan of \$25,000 at 6% simple interest for 5 years. What is the total amount to repay?
- ☐ A. \$25,750
☐ C. \$30,000
☐ B. \$27,500
☐ D. \$32,500
- 7) Which is a counterexample to the claim “All decimals that contain a 3 are irrational”?
- ☐ A. $\sqrt{3}$
☐ C. $\pi \approx 3.14159 \dots$
☐ B. 0.3 (terminating)
☐ D. 0.3030030003... (non-repeating)
- 8) What denominator appears when a repeating decimal has a 4-digit repeating block?
- ☐ A. 10
☐ C. 999
☐ B. 100
☐ D. 9999



Idaho ISAT 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 Idaho ISAT practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (8.G.B.8) The inequality $y \leq 4x - 8$ has LESS THAN OR EQUAL ($\leq$), so a SOLID line and shading BELOW.
- 2) **Choice C is correct.** (8.EE.B.5) Unit price $k = \frac{9.60}{8} = 1.20$ dollars per song.
- 3) **Choice D is correct.** (8.EE.C) Simplify the second equation: $2y = 2x + 4$ becomes $y = x + 2$, the same as the first equation. They represent the same line, so they intersect at infinitely many points.
- 4) **Choice A is correct.** (8.F.B.4) y -intercept is 5 at (0, 5). Slope: $\frac{13-5}{2-0} = \frac{8}{2} = 4$. Equation: $y = 4x + 5$.
- 5) **Choice B is correct.** (8.G.B.8) Distance $= \sqrt{(5-0)^2 + (12-0)^2} = \sqrt{25+144} = \sqrt{169} = 13.0$. (This is a 5-12-13 Pythagorean triple.)
- 6) **Choice B is correct.** (8.G.A.5) A nonagon's interior angles sum to $(9-2) \times 180 = 1260^\circ$. The eight known angles sum to $140 + 142 + 138 + 140 + 136 + 141 + 139 + 137 = 1113^\circ$, so the ninth angle is $1260 - 1113 = 147^\circ$.
- 7) **Choice B is correct.** (8.G.A.4) A scale factor of 0.75 means each length in the new figure is 75% of the matching original length.
- 8) **Choice A is correct.** (8.EE.C.7) Subtract 6: $-2x \geq -8$. Divide by -2 (FLIP): $x \leq 4$.
- 9) **The correct answer is $x = 3$.** (8.EE.C.7) Distribute the 3: $3x+6-5 = x+7$. Simplify: $3x+1 = x+7$. Subtract x from both sides: $2x+1 = 7$. Subtract 1 from both sides: $2x = 6$. Divide by 2: $x = 3$. Verify: $3(3+2)-5 = 3(5)-5 = 15-5 = 10$ and $3+7 = 10$ ✓.
- 10) **Choice A is correct.** (8.F.B.5) The graph rises from (0, 2) to (4, 5), then falls from (4, 5) to (6, 1). Its greatest y -value is 5, and the y -intercept is 2, so choice A is the only correct set.
- 11) **Choice B is correct.** (8.G.A.5) The angles sum to 180° : $(n+15) + (n+20) + (2n+25) = 180$. Thus $4n+60 = 180$, so $4n = 120$ and $n = 30$.
- 12) **Choice A is correct.** (8.G.B.6, 8.G.B.7) From $(\sqrt{5})^2 + (\sqrt{20})^2 = c^2$, we get $5 + 20 = 25$, so $c = \sqrt{25} = 5$.
- 13) **Choice A is correct.** (8.F.A.1) Graph A is one nonvertical straight line, so it is a linear function. Graph B is a function but not linear. Graph C is made of two separate segments, not one single linear function. Graph D is a vertical line segment, so it is not a function.
- 14) **Choice B is correct.** (8.F.A.3) A linear function is represented by a straight line on a coordinate plane. This graph shows a straight line, so the function is linear.
- 15) **Choice B is correct.** (8.G.A.3) When dilated by scale factor k , area is multiplied by k^2 . Here: $10 \times 3^2 = 10 \times 9 = 90$.
- 16) **Choice A is correct.** (8.G.B.7) Co-interior angles are supplementary. So $u = 180 - 106 = 74^\circ$.
- 17) **Choice B is correct.** (8.G.C.9) $343 = \frac{1}{3} \times s^2 \times 7$, so $s^2 = 147$. Therefore $s = \sqrt{147} = 7\sqrt{3}$ cm.
- 18) **Choice B is correct.** (8.G.B.7) Decompose using addition and subtraction. First rectangle $= 10 \times 6 = 60 \text{ ft}^2$. Second rectangle $= 8 \times 4 = 32 \text{ ft}^2$. The overlap region is $4 \times 4 = 16 \text{ ft}^2$ and must be subtracted to avoid double-counting. Total $= 60 + 32 - 16 = 76 \text{ ft}^2$.
- 19) **Choice A is correct.** (8.SP.A.1) An exponential curve is nonlinear. The rate of change is not constant, increasing over time.
- 20) **Choice C is correct.** (8.SP.A.4) Row-conditional frequency: among HR (row total 120), remote workers are 35. Denominator is the row total, not column or grand total.
- 21) **The correct answer is A,B.** (8.EE.B.6) Options A and B both have slope 4, making them parallel. Option C has slope -4 , option D has slope $\frac{1}{4}$, and option E has slope 2, so none of these match.
- 22) **Choice B is correct.** (8.G.B.8) Deviations: $|3 - 5.5| = 2.5$ (twice), $|5 - 5.5| = 0.5$ (three times), $|7 - 5.5| = 1.5$ (twice), $|9 - 5.5| = 3.5$. Sum $= 5 + 1.5 + 3 + 3.5 = 13$. MAD $= 13/8 = 1.625 \approx 1.63$.
- 23) **Choice D is correct.** (8.G.B.7) Numbers less than 4: 1, 2, 3. Rolling a 2 is already included in that set. So favorable outcomes: 1, 2, 3 = 3 outcomes. $P = \frac{3}{6} = \frac{1}{2}$.
- 24) **Choice B is correct.** (8.NS.A.2) From the table, count all cells: 3 colors times 2 coin outcomes = 6 total outcomes.
- 25) **The correct answer is $\sqrt{13}$.** (8.G.A.1) A 180° rotation preserves distances from the origin. Distance from origin to (3, 2) is $\sqrt{3^2 + 2^2} = \sqrt{13}$.



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Hi, Progress Maker!

◇ You have done more than complete a set of tests. You have rehearsed the habits that make Grade 8 math feel less surprising. ◇

★ **Remember this:** Progress is not always loud. Sometimes it looks like fewer careless errors, clearer work, better pacing, and more confidence when a problem is unfamiliar. You practiced across 7 full Grade 8 practice tests, and that repeated effort matters. ★

Signs of Growth

- **Clear Work:** Your steps are easier to follow.
- **Better Pacing:** You know when to move on and return.
- **Stronger Checks:** You catch mistakes earlier.
- **Calmer Thinking:** You know what to try next.

Grade 8 test-day tip: Keep one short list of mistakes you often make, then check that list before each practice session.

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

Jay Daie

Your Growth Coach

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 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!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

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 | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Pythagorean Theorem |
| ✓ Ratios & Proportional Relationships | ✓ Volume & Surface Area |
| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| ✓ Measurement & Data | ✓ And More! |



2 EXTRA ONLINE PRACTICE TESTS INCLUDED!

Use these two additional online practice tests for extra review after the printed tests.

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BUILD CONFIDENCE. SHARPEN SKILLS. ACE YOUR EXAM!