

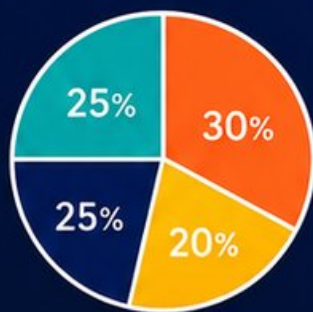
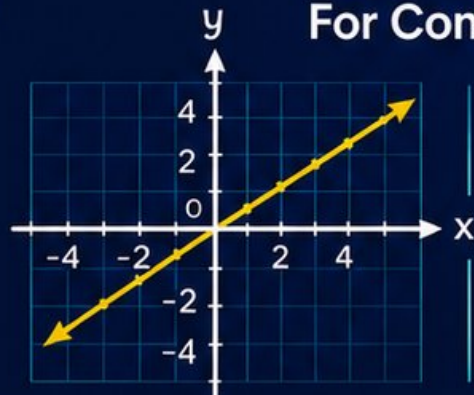
Oregon OSAS

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

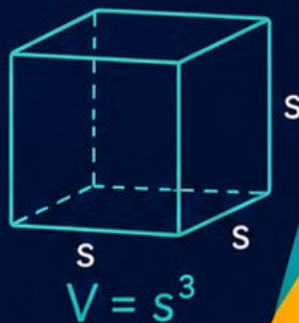


$$y = mx + b$$

$$2x - 3y = 6$$

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

$$A = bh$$



**4 PRINTED
TESTS**



**2 ONLINE
TESTS**



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



4 Oregon OSAS Grade 8 Math Practice Tests

Standards-Based OSAS Practice for Confident Grade 8 Review



Four complete 40-question Grade 8 OSAS 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, Oregon Grade 8 Problem Solver!

Four focused rounds for sharper OSAS math thinking

This book gives you four full Grade 8 OSAS 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 Oregon 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.

Oregon 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 OSAS 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) Two students sketch different trend lines through the same scatter plot. Student A's line has a gentler slope, while Student B's line has a steeper slope. What could explain this difference?

- ☐ A. One student made a calculation error
- ☐ B. The students used different data sets
- ☐ C. Only one line can ever be correct
- ☐ D. Sketching a trend line by eye allows for reasonable variation

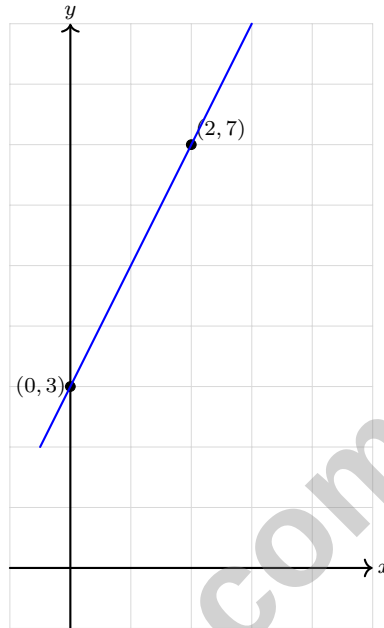
2) A student uses elimination to solve: $3x + 2y = 16$ and $5x - 2y = 24$. They add the equations to get $8x = 40$, so $x = 5$. Then they substitute to find $y = 0.5$. Is this correct?

- ☐ A. No, adding eliminates x , not y .
- ☐ B. No, the substitution is wrong.
- ☐ C. No, the system has no solution.
- ☐ D. Yes, the solution is correct.

3) A line passes through $(0, 2)$ and $(4, 10)$. Find the slope.



- 4) The graph shows a linear function passing through points $(0, 3)$ and $(2, 7)$.



What is the slope of the line?

- ☐ A. 2
- ☐ B. 3
- ☐ C. $\frac{1}{2}$
- ☐ D. $\frac{2}{7}$
- 5) A building is 60 feet tall. A rope is attached to the top and staked to the ground 25 feet away from the base. What is the length of the rope?
- ☐ A. 35 feet
- ☐ B. 65 feet
- ☐ C. 85 feet
- ☐ D. 3600 feet



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- 6) A model car is 12 cm long. The actual car is 4.8 m long. What is the scale factor from the model to the actual car?

☐ A. 40 ☐ C. 0.4
☐ B. 4 ☐ D. 0.25

- 7) The table shows values of $f(x) = 3x - 2$. What is $f(5)$?

x	1	2	3	5
$f(x)$	1	4	7	?

☐ A. 13 ☐ C. 12
☐ B. 15 ☐ D. 17

- 8) If r is a nonzero rational number and i is an irrational number, which expression is definitely rational?

☐ A. $r + i$ ☐ C. $\frac{r}{r}$ (where $r \neq 0$)
☐ B. $r \times i$ ☐ D. $i - r$

- 9) How many ways can you arrange 3 different books chosen from a shelf of 7 books?

☐ A. $7^3 = 343$ ☐ C. $7 \times 6 \times 5 = 210$
☐ B. $7 + 6 + 5 = 18$ ☐ D. $\binom{7}{3} = 35$

- 10) Convert $0.\overline{7}$ to a fraction.

☐ A. $\frac{1}{9}$ ☐ C. $\frac{7}{99}$
☐ B. $\frac{7}{10}$ ☐ D. $\frac{7}{9}$



1) A student claims that sides 5, 10, and $\sqrt{125}$ form a right triangle. Is this correct?

- ☐ A. Yes, because $5^2 + 10^2 = (\sqrt{125})^2$ ☐ C. Yes, because 5 and 10 are factors of $\sqrt{125}$
- ☐ B. No, because $\sqrt{125} \approx 11.2$, which is too large ☐ D. No, because $5 + 10 \neq \sqrt{125}$

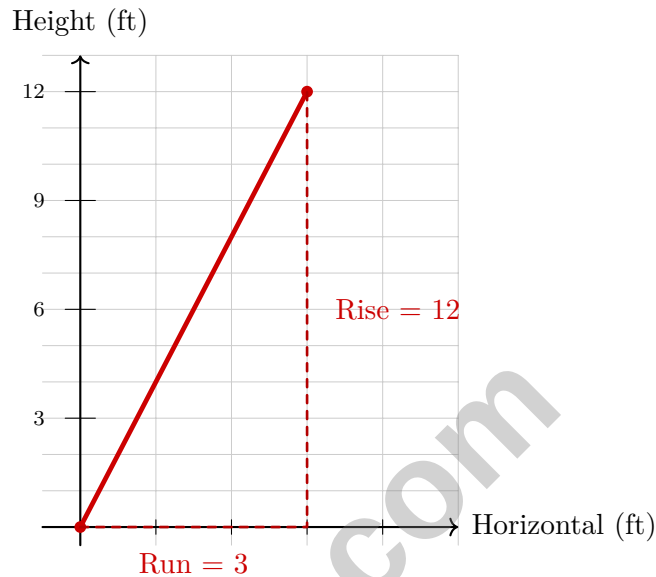
2) A math teacher says: “A function is when you input a number and always get the same output.” Is this definition correct?

- ☐ A. Yes, this is a complete definition. that different inputs produce the same output.
- ☐ B. No, because constant functions like $y = 5$ are not functions. ☐ D. Yes, as long as the input is positive.
- ☐ C. No, a function only requires that each input has exactly one output, not



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- 3) A ladder against a building creates a line from $(0, 0)$ on the ground to $(3, 12)$ where coordinates are (horizontal distance in ft, height in ft). What is the slope?



- ☐ A. 4 feet per foot
- ☐ B. $\frac{1}{4}$ feet per foot
- ☐ C. 3 feet per foot
- ☐ D. 12 feet per foot
- 4) A recipe calls for 2 parts flour to 1 part sugar. If a baker uses 9 cups total of these two ingredients, how many cups of flour are needed?
- ☐ A. 3 cups
- ☐ B. 4.5 cups
- ☐ C. 6 cups
- ☐ D. 7 cups



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

☐ A. 3

☐ C. 10

☐ B. 4

☐ D. 6

2) Which of the following relations is a function?

☐ A. $\{(1, 2), (1, 3), (2, 4)\}$
☐ C. $\{(2, 5), (2, 6), (3, 7)\}$
☐ B. $\{(1, 2), (2, 3), (3, 4)\}$
☐ D. $\{(4, 1), (4, 2), (4, 3)\}$

3) A stock price drops from \$45 to \$30 over 10 days. What is the slope (rate of change per day)?

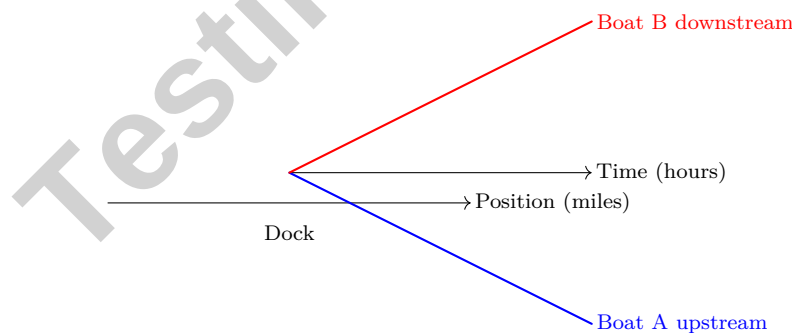
☐ A. $-\$1.50$ per day

☐ C. $\$1.50$ per day

☐ B. $-\$3$ per day

☐ D. $\$0.50$ per day

4) Two boats depart from the same dock, traveling in opposite directions along a river. Boat A goes upstream at 10 mph in still water; Boat B goes downstream at 14 mph in still water. The river current is 2 mph. After how many hours are they 36 miles apart?


☐ A. 1 hour

☐ C. 1.5 hours

☐ B. 2 hours

☐ D. 2.5 hours


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5) If $g(x) = x + 7$, what is $g(2)$?

☐ A. 5

☐ C. 10

☐ B. 9

☐ D. 14

6) In triangle ABC , angle $A = (2m+5)^\circ$, angle $B = (3m-10)^\circ$, and angle $C = (m+35)^\circ$. Find angle A .

☐ A. 45°

☐ C. 65°

☐ B. 55°

☐ D. 75°

7) A student incorrectly states: "In a right triangle, if the hypotenuse is 13 and one leg is 5, the other leg must be $13 - 5 = 8$." What is the correct other leg?

☐ A. 8 (student's answer; incorrect)

☐ C. 18

☐ B. 12 (correct)

☐ D. 9



Oregon OSAS 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 Oregon OSAS practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** **(8.DR.C.3)** When sketching trend lines by hand, slight differences in slope are natural and acceptable, as long as both lines reasonably balance data on both sides and follow the overall trend.
- 2) **Choice D is correct.** **(8.AEE.C.8)** Adding the two equations: $(3x + 2y) + (5x - 2y) = 16 + 24$, so $8x = 40$, and $x = 5$. The $2y$ terms cancel, correctly eliminating y (not x , as distractor A suggests). Substituting into the first equation: $3(5) + 2y = 16$, so $15 + 2y = 16$, giving $y = 0.5$. The solution is correct.
- 3) **The correct answer is 2.** **(8.AFN.B)** Slope = $\frac{10 - 2}{4 - 0} = \frac{8}{4} = 2$.
- 4) **Choice A is correct.** **(8.AFN.B.4)** Slope is $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 3}{2 - 0} = \frac{4}{2} = 2$.
- 5) **Choice B is correct.** **(8.GM.B.6, 8.GM.B.7)** The rope is the hypotenuse. Using $a^2 + b^2 = c^2$: $60^2 + 25^2 = 3600 + 625 = 4225$, so $c = 65$ feet (scaled 5-12-13 triple).
- 6) **Choice A is correct.** **(8.GM.A.4)** Convert to same units: 4.8 m = 480 cm. Scale factor is $\frac{480}{12} = 40$.
- 7) **Choice A is correct.** **(8.NS.A.1)** Substitute $x = 5$: $f(5) = 3(5) - 2 = 15 - 2 = 13$.
- 8) **Choice C is correct.** **(8.NS.A.1)** Since r is nonzero, $\frac{r}{r} = 1$, which is always rational. The other expressions: $r + i$ and $i - r$ are irrational (sum/difference of rational and irrational), and $r \times i$ is irrational (product of nonzero rational and irrational).
- 9) **Choice C is correct.** **(8.NS.A.2)** Select the 1st book (7 choices), 2nd (6 remaining), 3rd (5 remaining). Total: $7 \times 6 \times 5 = 210$. (This is $P(7, 3) = \frac{7!}{4!}$)
- 10) **Choice D is correct.** **(8.NS.A.1)** Let $x = 0.\overline{7}$. Multiply by 10: $10x = 7.\overline{7}$. Subtract: $10x - x = 7$, so $9x = 7$ and $x = \frac{7}{9}$.
- 11) **Choice D is correct.** **(8.NS.A.2)** $8^2 = 64$ and $9^2 = 81$. Since $64 < 72 < 81$, $\sqrt{72}$ lies between $\sqrt{64} = 8$ and $\sqrt{81} = 9$. Those perfect squares help us place $\sqrt{72}$ between 8 and 9.
- 12) **Choice D is correct.** **(8.NS.A.2)** $4^2 = 16$ and $5^2 = 25$. Since $16 < 24 < 25$, we have $4 < \sqrt{24} < 5$. More precisely, $\sqrt{24} \approx 4.90$.
- 13) **Choice D is correct.** **(8.AEE.A.1)** Moving the decimal 8 places left to get 3.04 gives the exponent 8.
- 14) **The correct answer is $\frac{1}{2}$.** **(8.DR.C.3)** Among juniors: $\frac{100}{100 + 100} = \frac{100}{200} = \frac{1}{2} = 0.5$.
- 15) **Choice C is correct.** **(8.GM.A.3)** Lateral area = $2(10)(4) + 2(6)(4) = 80 + 48 = 128 \text{ cm}^2$ ✓. Area of two bases = $2(10)(6) = 120 \text{ cm}^2$. Total = $128 + 120 = 248 \text{ cm}^2$.
- 16) **Choice C is correct.** **(8.GM.A.1)** A 180° rotation maps each point (x, y) to $(-x, -y)$, which sends Figure A directly onto Figure B. The size is unchanged, so no dilation is involved.
- 17) **Choice D is correct.** **(8.AEE.B.6)** Using point-slope form, then converting: $5 = -3(2) + b$ gives $b = 11$, so $y = -3x + 11$.
- 18) **The correct answer is B,D.** **(8.AFN.A.1)** Option B: each input (0, 1, 2, 3) has exactly one output (0, 1, 2, 3)—a function. Option D: each input (5, 6, 7) has exactly one output (1, 2, 3)—a function. Option A: input 1 maps to both 2 and 3—not a function. Option C: input 2 maps to both 4 and 5—not a function. Option E: input 1 maps to both 1 and 3—not a function.
- 19) **Choice D is correct.** **(8.AEE.C)** A: Identity (infinitely many). B: Subtract $3x$: $4 = 7$ (false, no solution). C and D: Unique solutions.
- 20) **Choice A is correct.** **(8.AEE.C.7)** Subtract $3x$: $x - 9 \leq 1$. Add 9: $x \leq 10$.
- 21) **Choice B is correct.** **(8.GM.B.8)** A strict inequality, such as $<$, uses a dashed boundary line because points on the line are not included in the solution.
- 22) **Choice B is correct.** **(8.AFN.B.4)** Negative slope means as one variable increases, the other decreases. More training leads to fewer errors.
- 23) **Choice D is correct.** **(8.AEE.A.1)** M: $I = 1000 \times 0.04 \times 3 = \120 . N: $1000(1.02)^3 \approx 1061.21$, so interest $\approx \$61.21$. Account M is better.
- 24) **Choice D is correct.** **(8.AEE.A.1)** Negative exponent flips the fraction: $\left(\frac{1}{3}\right)^{-2} = \left(\frac{3}{1}\right)^2 = 3^2 = 9$.
- 25) **Choice C is correct.** **(8.AEE.A)** Area = 256, so $s = \sqrt{256} = 16$ m. Perimeter = $4s = 4 \times 16 = 64$ m.



Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. 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:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 8 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

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

Jay Daie

Your Review 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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