

Texas STAAR

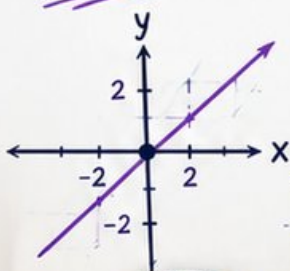
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

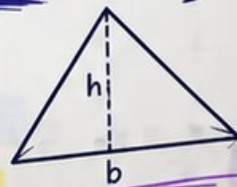
$$y = mx + b$$



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

Practice
Today
Succeed
Tomorrow!

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



7 PRINTED
TESTS



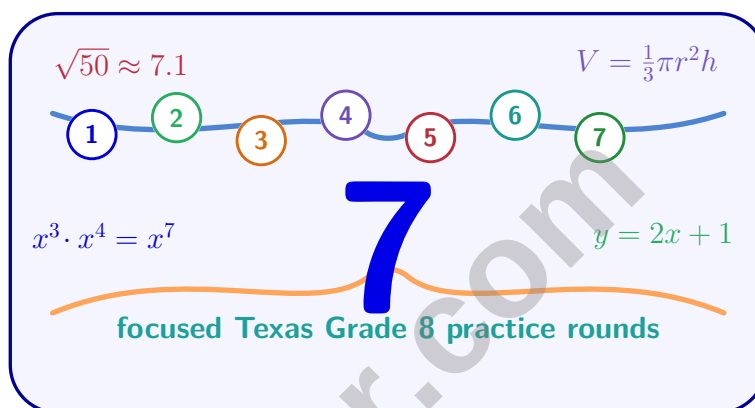
2 ONLINE
TESTS



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

7 Texas STAAR Grade 8 Math Practice Tests

Seven STAAR Practice Tests for Confident Grade 8 Math Review



Seven complete 40-question Grade 8 STAAR 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, Texas Grade 8 Problem Solver!

Seven focused rounds for sharper STAAR math thinking

This book gives you seven full Grade 8 STAAR 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 Texas 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.

Texas 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 STAAR 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.



Scan me!
For more practice
& answers

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1) The table below shows a relation. Is it a function?

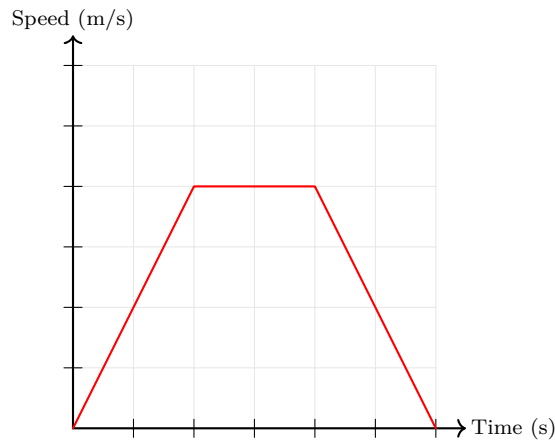
x	y
1	3
2	6
3	9
4	12

- ☐ A. No, because the outputs are larger than inputs.
- ☐ B. Yes, each input has exactly one output.
- ☐ C. No, because y values increase by 3.
- ☐ D. Yes, because all values are positive.
- 2) A bacterium is 9×10^{-6} meters long. A virus is 3×10^{-8} meters long. The bacterium is how many times longer?

- ☐ A. 3×10^3
- ☐ B. 3×10^{-2}
- ☐ C. 3×10^2
- ☐ D. 6×10^{-6}



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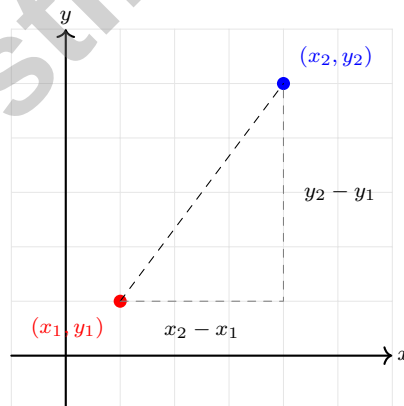


3)

A car accelerates, maintains constant speed, then brakes. Which intervals match?

- ☐ A. Accelerate $[0,2]$, constant $[2,4]$, brake $[4,6]$
☐ C. Brake $[0,2]$, constant $[2,4]$, accelerate $[4,6]$
- ☐ B. Constant $[0,2]$, accelerate $[2,4]$, brake $[4,6]$
☐ D. Accelerate $[0,4]$, brake $[4,6]$, constant after

4) Which of the following represents the distance formula between two points (x_1, y_1) and (x_2, y_2) ?



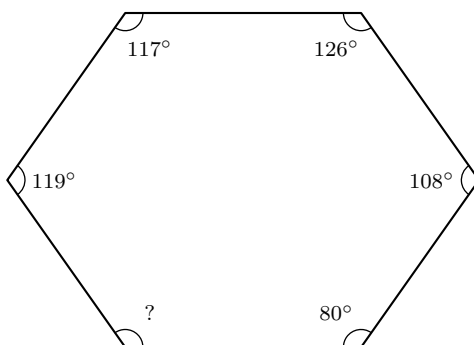
- ☐ A. $d = |x_2 - x_1| + |y_2 - y_1|$
☐ C. $d = (x_2 - x_1)^2 + (y_2 - y_1)^2$
- ☐ B. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
☐ D. $d = x_2 - x_1 + y_2 - y_1$



- 5) A polygon has an interior angle sum of 1260° . How many sides does it have?
- ☐ A. 9 ☐ C. 7
☐ B. 8 ☐ D. 10
- 6) Trapezoid $PQRS$ is similar to Trapezoid $TUVW$ with scale factor $\frac{3}{2}$. If $PQ = 8$ cm in trapezoid $PQRS$, what is the length of TU in trapezoid $TUVW$?
- ☐ A. 12 cm ☐ C. 8 cm
☐ B. 5.33 cm ☐ D. 10.67 cm
- 7) Function through $(1, 4)$ and $(3, 8)$. Slope is?
- ☐ A. 1 ☐ C. 3
☐ B. 2 ☐ D. 4
- 8) A rectangular garden is 8 meters long and 6 meters wide. What is the distance from one corner to the opposite corner (diagonal)?
- ☐ A. 10 m ☐ C. 14 m
☐ B. 7 m ☐ D. 48 m



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1)

A hexagon has five interior angles: 80° , 108° , 126° , 117° , 119° . Find the sixth angle.

☐ A. 165° ☐ C. 175° ☐ B. 170° ☐ D. 180° 2) Solve for x : $3(x + 1) = 2(x + 4)$ ☐ A. $x = 2$ ☐ C. $x = -1$ ☐ B. $x = 8$ ☐ D. $x = 5$

3) The elevation rises 500 feet over a horizontal distance of 2000 feet. What is the slope?

4) Which is the best estimate of $\sqrt{48}$?☐ A. 6.5☐ C. 6.9☐ B. 7.0☐ D. 8.2

5) The line passes through $(-3, 5)$ and $(1, 13)$. Find the slope of this line.

6) $\frac{(4 \times 10^6) \times (3 \times 10^2)}{6 \times 10^4} = ?$

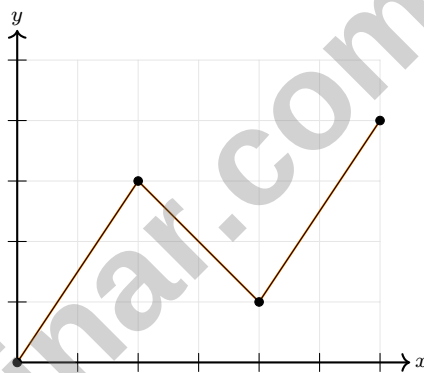
☐ A. 2×10^2

☐ B. 12×10^8

☐ C. 2×10^4

☐ D. 0.2×10^4

7)



Over which interval is the function decreasing most rapidly?

☐ A. From $x = 0$ to $x = 2$

☐ B. From $x = 2$ to $x = 4$

☐ C. From $x = 4$ to $x = 6$

☐ D. The function never decreases



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- 1) A rectangle has a length that is 3 meters more than its width. If the perimeter is 26 meters, which equation represents this, where w is the width?

☐ A. $w + (w + 3) = 26$

☐ C. $w(w + 3) = 26$

☐ B. $3w = 26$

☐ D. $2w + 2(w + 3) = 26$

- 2) A health clinic surveys 280 patients about diet type:

	Vegetarian	Omnivore	Total
Age 18–40	84	112	196
Age 41+	28	56	84
Total	112	168	280

What is the joint relative frequency of age 41+ omnivores, as a percentage?

☐ A. 20%

☐ C. 33%

☐ B. 25%

☐ D. 40%

- 3) A coach recorded sprint times (in seconds): $\{8, 8, 8, 9, 10\}$. Mean = 8.6 seconds. What is the MAD?

☐ A. 0.4

☐ C. 0.6

☐ B. 0.72

☐ D. 1.2

- 4) A restaurant offers 10 appetizers, 12 mains, 5 sides, and 6 desserts. A complete meal includes one appetizer, one side, and one dessert. How many different complete meals can be ordered?

☐ A. $10 + 5 + 6 = 21$

☐ C. $10 \times 5 \times 6 = 300$

☐ B. $10 \times 12 \times 5 \times 6 = 3,600$

☐ D. $(10 + 12) \times 5 \times 6 = 660$



5) Which best approximates $\sqrt{50}$?

☐ A. 6.5

☐ C. 5.0

☐ B. 7.5

☐ D. 7.1

6) An exterior angle of a triangle measures 148° . If one of the remote interior angles is 85° , find the other remote interior angle.

7) Two pyramids have the same base area of 100 ft^2 . Pyramid X has height 9 ft; Pyramid Y has height 15 ft. What is the difference between their volumes in cubic feet?

8) Which of the following best describes $0.9\overline{9}$?

☐ A. Irrational

☐ C. Equal to 1, rational

☐ B. Between 0 and 1, rational

☐ D. Greater than 1, irrational

9) What fraction equals $0.8\overline{3}$?

☐ A. $\frac{83}{100}$

☐ C. $\frac{8}{30}$

☐ B. $\frac{83}{99}$

☐ D. $\frac{75}{90} = \frac{5}{6}$



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& answers

Texas STAAR 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 Texas STAAR practice test.



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For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(8.5(G))** Each input value (1, 2, 3, 4) corresponds to exactly one output value (3, 6, 9, 12). The relationship is $y = 3x$, making it a function.
- 2) **Choice C is correct.** **(8.2(C))** Divide: $\frac{9 \times 10^{-6}}{3 \times 10^{-8}} = \frac{9}{3} \times 10^{-6-(-8)} = 3 \times 10^2$.
- 3) **Choice A is correct.** **(8.5(C))** Rising segment = increasing speed (acceleration). Flat = constant speed. Falling = decreasing speed (braking).
- 4) **Choice B is correct.** **(8.7(D))** The distance formula comes from the Pythagorean Theorem applied to the horizontal and vertical legs of a right triangle.
- 5) **Choice A is correct.** **(8.8(D))** Set $(n - 2) \times 180 = 1260$. Then $n - 2 = 7$, so $n = 9$ (a nonagon).
- 6) **Choice A is correct.** **(8.3(A))** Scale factor from $PQRS$ to $TUVW$ is $\frac{3}{2}$. So $TU = PQ \times \frac{3}{2} = 8 \times 1.5 = 12$ cm.
- 7) **Choice B is correct.** **(8.5(F))** Slope = $(8 - 4)/(3 - 1) = 4/2 = 2$.
- 8) **Choice A is correct.** **(8.7(C))** The diagonal is the hypotenuse of a right triangle with legs 8 and 6: $d^2 = 8^2 + 6^2 = 64 + 36 = 100$, so $d = 10$ m.
- 9) **Choice B is correct.** **(8.11(A))** In this plot, the outlier sits far from the upward trend line, so it increases scatter and weakens the correlation coefficient.
- 10) **The correct answer is 4.9.** **(8.2(D))** $\sqrt{6} \times \sqrt{4} = \sqrt{24} = 2\sqrt{6} \approx 2 \times 2.45 = 4.90$.
- 11) **Choice A is correct.** **(8.5(D))** The slope is 75, meaning the account increases by \$75 each month.
- 12) **The correct answer is 5.** **(8.8(A))** Solve $45 + 5q \geq 70$, giving $q \geq 5$. The minimum whole number is 5.
- 13) **Choice A is correct.** **(8.12(D))** $P(3 \text{ then } 2) = \frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$.
- 14) **Choice A is correct.** **(8.10(D))** Find two numbers that multiply to 42 and add to -13 : -6 and -7 . Verify: $(-6)(-7) = 42$ and $-6 - 7 = -13$.
- 15) **Choice A is correct.** **(8.5(B))** Initial water is 120 gallons (intercept). Drains 3 gallons per minute (negative slope). Equation: $W = -3t + 120$.
- 16) **Choice B is correct.** **(8.10(B))** If the quadrilaterals are congruent with P corresponding to T, then $\angle P$ must equal $\angle T$. Since $75^\circ \neq 85^\circ$, the claim of congruence is false.
- 17) **Choice D is correct.** **(8.10(C))** Reflection across $y = -x$ maps $(x, y) \rightarrow (-y, -x)$. Reversing: $(2, -5) \rightarrow (-(-5), -2) = (5, -2)$.
- 18) **Choice C is correct.** **(8.8(D))** When parallel lines are cut by a transversal, all angles are either 67° or $180 - 67 = 113^\circ$. Since $47^\circ \neq 67^\circ$ and $47^\circ \neq 113^\circ$, it does not appear.
- 19) **Choice B is correct.** **(8.1(A))** When corresponding angles are not congruent, the lines are not parallel. Corresponding angles are congruent only when lines are parallel.
- 20) **Choice A is correct.** **(8.6(A))** $V = \frac{1}{3} \times (2 \times 2) \times 3 = \frac{1}{3} \times 4 \times 3 = 4 \text{ m}^3 = 4000 \text{ L}$.
- 21) **The correct answer is A,D.** **(8.8(A))** A: Multiplying by 4 gives $2x - 3 = 20$, then $2x = 23$, so $x = 11.5$ (correct). B: Dividing by 2 before clearing the denominator is wrong. C: Changing only the numerator is not a legal move. D: Multiply by 4 $\Rightarrow 2x - 3 = 20$, add 3 $\Rightarrow 2x = 23$, divide by 2 $\Rightarrow x = 11.5$ (correct). E: Subtracting 4 and multiplying by the numerator is invalid. Correct answers: A and D.
- 22) **Choice C is correct.** **(8.10(D))** Each rectangle area = $4 \times 2 = 8 \text{ m}^2$. Three rectangles = $3 \times 8 = 24 \text{ m}^2$.
- 23) **Choice B is correct.** **(8.5(C))** This is a joint frequency (read directly from the cell). Row label **Boys**, column **Basketball**: entry is 20.
- 24) **Choice A is correct.** **(8.11(B))** Mean = 5. All values equal the mean, so all deviations are 0. $MAD = 0/5 = 0$.
- 25) **Choice B is correct.** **(8.8(C))** First digit: 6 choices. Second digit: 5 remaining (no repetition). Third: 4 remaining. Total: $6 \times 5 \times 4 = 120$.
- 26) **Choice B is correct.** **(8.5(D))** A small residual (absolute value close to zero) means the data point lies near the trend line, indicating a good fit at that point.



Hi, Strategy Solver!

◇ Grade 8 math rewards students who think before they calculate. You practiced choosing strategies, not just hunting for answers. This broad and demanding book gave you seven strong Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** That matters because stronger math students do not use one method for every question. They notice the structure and choose the tool that fits. ★

Strategy Moves

- **Estimate:** Know the neighborhood of the answer.
- **Simplify:** Rewrite numbers in friendlier forms.
- **Model:** Draw what the words describe.
- **Verify:** Put the answer back into the problem.

Grade 8 test-day tip: Pause for ten seconds before hard questions. A short plan can save several minutes.

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

Jay Daie

Your Strategy Guide

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! |



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BUILD CONFIDENCE. SHARPEN SKILLS. ACE YOUR EXAM!