

3

Texas STAAR

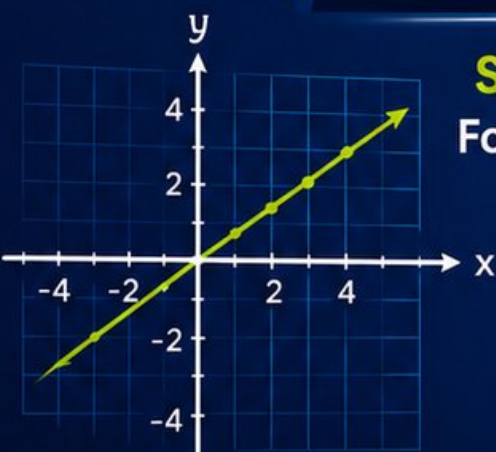
GRADE 8

MATH

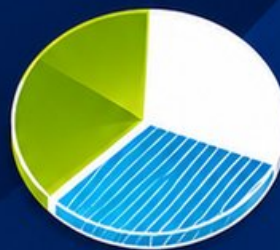
PRACTICE TESTS

$$a^2 + b^2 = c^2$$
$$\sqrt{x}$$

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



$$y = mx + b$$
$$2x + 5 = 13$$
$$x = 4$$



3

**PRINTED
TESTS**

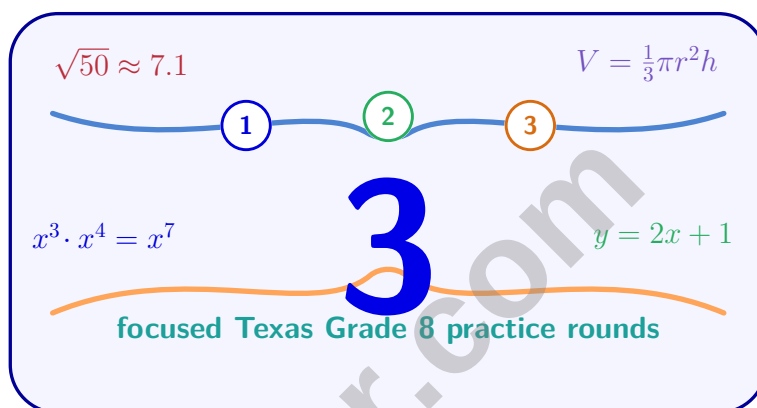
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**ONLINE
TESTS**

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

3 Texas STAAR Grade 8 Math Practice Tests

Grade 8 STAAR Practice for Stronger Reasoning and Accuracy



Three 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!

Three focused rounds for sharper STAAR math thinking

This book gives you three 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 three-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?

Three STAAR tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	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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For more practice
& answers

Table of Contents



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- 1) Point P is translated 6 units left and 8 units up to form point P'. If P is at $(3, -2)$, what are the coordinates of P'?
- ☐ A. $(-3, 6)$ ☐ C. $(-3, -10)$
☐ B. $(9, 6)$ ☐ D. $(9, -10)$
- 2) A cube with edge 2 m is attached to a rectangular prism with dimensions $4 \times 2 \times 2$ m (where the cube shares a 2×2 face). If we ignore the shared face, what is the total surface area of the composite solid?
- ☐ A. 40 m^2 ☐ C. 64 m^2
☐ B. 56 m^2 ☐ D. 72 m^2
- 3) Under which transformation would the image of a point (x, y) always lie on the opposite side of the origin from the original point?
- ☐ A. Reflection across the x -axis ☐ C. 180° rotation about the origin
☐ B. Reflection across the y -axis ☐ D. Translation 5 units right
- 4) The line $x + 2y = 8$ has slope:
- ☐ A. 1 ☐ C. $-\frac{1}{2}$
☐ B. -1 ☐ D. 2
- 5) Which value of x satisfies $2x + 6 = x + 12$?
- ☐ A. $x = 6$ ☐ C. $x = 18$
☐ B. $x = 4$ ☐ D. $x = 2$



6) Solve: $4x + 1 > 2x + 9$

☐ A. $x > 4$

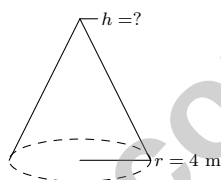
☐ B. $x < 4$

☐ C. $x > -4$

☐ D. $x < -4$

7) Write 4.7×10^{-4} in decimal (standard) form.

8)



A cone has a base radius of 4 m and volume of 201.06 m^3 . What is its height? (Use $\pi \approx 3.14$.)

☐ A. 12 m

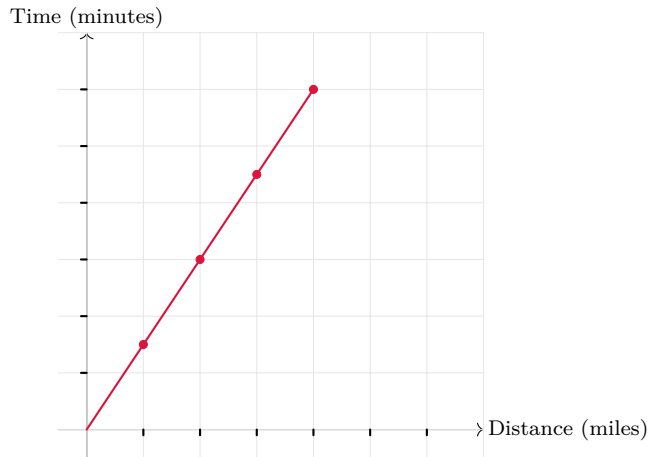
☐ B. 15 m

☐ C. 18 m

☐ D. 24 m



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9)

Using the linear model, which distance-time pair should be predicted MOST reliably?

- ☐ A. 5 miles in about 7.5 minutes ☐ C. 2.5 miles in about 3.75 minutes
☐ B. 0.5 miles in about 0.75 minutes ☐ D. 10 miles in about 15 minutes

10) 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

11) What is $\sqrt[3]{1728}$?

- ☐ A. 10 ☐ C. 12
☐ B. 11 ☐ D. 13

12) Determine how many solutions this system has:
$$\begin{cases} x - 3y = 6 \\ 2x - 6y = 12 \end{cases}$$

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



1) A line passes through (1, 3) and (3, 7). Is this a linear relationship?

- ☐ A. No, the slope is not 1 ☐ C. Yes, a line is always linear
☐ B. No, because you need more than two points ☐ D. Yes, only if the slope is positive

2) What is $0.\overline{111}$ as a fraction?

- ☐ A. $\frac{1}{111}$ ☐ C. $\frac{111}{1000}$
☐ B. $\frac{111}{100}$ ☐ D. $\frac{111}{999} = \frac{1}{9}$

3) To the nearest hundredth, $\sqrt{19} \approx ?$

- ☐ A. 4.35 ☐ C. 4.37
☐ B. 4.38 ☐ D. 4.36

4) Which is larger: $\sqrt{3} \times \sqrt{8}$ or 4.8?

- ☐ A. Cannot be determined ☐ C. They are exactly equal
☐ B. 4.8 is larger ☐ D. $\sqrt{3} \times \sqrt{8}$ is larger

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

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



6) What is 9.0×10^{-5} in standard form?

☐ A. 90,000

☐ C. 0.00009

☐ B. 0.9

☐ D. 0.000009

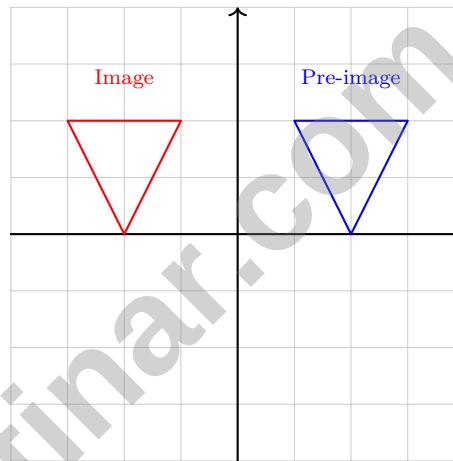
7) A rectangular prism has length $\frac{3}{2}$ ft, width 1 ft, and height $\frac{1}{2}$ ft. What is its surface area?

☐ A. $\frac{11}{4}$ ft²

☐ C. 7 ft²

☐ B. $\frac{11}{2}$ ft²

☐ D. $\frac{15}{2}$ ft²



8)

The triangle was reflected across which line?

☐ A. $y = x$

☐ C. The y -axis

☐ B. $y = -x$

☐ D. The line $y = 2$

9) Which equation represents a line with slope 4 and y -intercept 6?

☐ A. $y = 6x + 4$

☐ C. $y = 4x - 6$

☐ B. $y = -4x + 6$

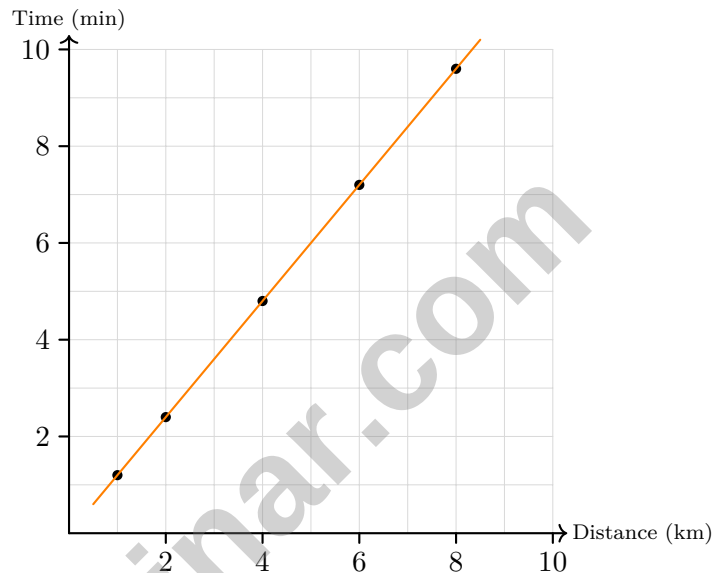
☐ D. $y = 4x + 6$



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1) A student multiplies $(3.5 \times 10^4) \times (2 \times 10^3)$ and gets 7×10^7 . Which is true?

- ☐ A. The exponents should be multiplied to get 10^{12} .
- ☐ B. The coefficient is wrong; should multiply as $3.5 \times 2 = 7$, not separate.
- ☐ C. The student is correct.
- ☐ D. The coefficient should be changed to 0.7.



2)

A delivery company tracks distance versus delivery time. The trend line shows an almost perfect fit with points nearly aligned. What can you conclude?

- ☐ A. Distance and time are unrelated
- ☐ B. There is a strong linear relationship with very small residuals
- ☐ C. The trend line should not be trusted
- ☐ D. The data contains measurement errors



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& answers

3) A photograph is 10 inches wide. A thumbnail is 0.5 inches wide. What is the scale factor from the photograph to the thumbnail?

☐ A. 20

☐ C. 0.5

☐ B. 0.05

☐ D. 2

4) Given $f(x) = x^2$ and $g(x) = 2x + 1$, which statement is true?

☐ A. $f(3) = g(3)$

☐ C. $f(3) < g(3)$

☐ B. $f(3) > g(3)$

☐ D. Cannot be determined

Number Sorting

$\pi, \sqrt{4}, 0.\bar{5}, -2.5, \sqrt{11}$

How many are rational?

5)

☐ A. One ($\sqrt{4}$ only)

☐ C. Three ($\sqrt{4}, 0.\bar{5}$, and -2.5)

☐ B. Two ($\sqrt{4}$ and $0.\bar{5}$)

☐ D. Four (all but π or $\sqrt{11}$)

6) Which fraction equals $0.\overline{12}$?

☐ A. $\frac{12}{100}$

☐ C. $\frac{12}{90}$

☐ B. $\frac{1}{12}$

☐ D. $\frac{12}{99} = \frac{4}{33}$

7) Which value is irrational?

☐ A. $\sqrt{16}$

☐ C. $\sqrt{7}$

☐ B. $\sqrt{9}$

☐ D. $\sqrt{25}$



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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& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **8.10(B)** Subtract 6 from the x -coordinate and add 8 to the y -coordinate: $(3-6, -2+8) = (-3, 6)$.
- 2) **Choice B is correct.** **8.7(B)** Cube SA = 24 m^2 , rectangular prism SA = 40 m^2 . Subtract the two shared faces: $24 + 40 - 2(4) = 56 \text{ m}^2$.
- 3) **Choice C is correct.** **8.10(A)** A 180° rotation maps $(x, y) \rightarrow (-x, -y)$, placing the image on the opposite side of the origin. Single reflections across axes do not have this property.
- 4) **Choice C is correct.** **8.5(B)** Rewrite in slope-intercept form: $2y = -x + 8$, so $y = -\frac{1}{2}x + 4$. The slope is $-\frac{1}{2}$.
- 5) **Choice A is correct.** **8.8(A)** Subtract x and 6: $x = 6$. Check: $2(6) + 6 = 18$ and $6 + 12 = 18$ ✓. (Distractor B: arithmetic error; C: adding instead of subtracting.)
- 6) **Choice A is correct.** **8.8(A)** Subtract $2x$: $2x + 1 > 9$. Subtract 1: $2x > 8$. Divide by 2: $x > 4$.
- 7) **The correct answer is 0.00047.** **8.2(C)** Move the decimal 4 places to the left: $4.7 \times 10^{-4} = 0.00047$.
- 8) **Choice A is correct.** **8.6(A)** From $V = \frac{1}{3}\pi r^2 h$: $201.06 = \frac{1}{3} \times 3.14 \times 16 \times h = \frac{3.14 \times 16}{3} \times h = 16.747... \times h$. Thus $h = \frac{201.06}{16.747} \approx 12 \text{ m}$.
- 9) **Choice C is correct.** **8.5(D)** Predictions are most reliable within or near the observed data range (1–4 miles). Option (C) uses 2.5 miles, which is centered in this range; (D) is far extrapolation.
- 10) **Choice D is correct.** **8.12(A)** Interest: $I = 25000 \times 0.06 \times 5 = \$7,500$. Total: $25000 + 7500 = \$32,500$.
- 11) **Choice C is correct.** **8.2(B)** $12 \times 12 \times 12 = 1728$, so $\sqrt[3]{1728} = 12$.
- 12) **Choice C is correct.** **8.5(F)** The second equation is exactly 2 times the first equation. They represent the same line, so the system has infinitely many solutions.
- 13) **Choice C is correct.** **8.10(D)** $(2x + 3)^2 = (2x)^2 + 2(2x)(3) + 3^2 = 4x^2 + 12x + 9$.
- 14) **Choice D is correct.** **8.8(B)** (A) TRUE: strict $<$ uses dashed boundary. (B) TRUE: test $(0, 4)$: $0 + 2(4) = 8$, NOT < 8 , so the point is on the line but not in the solution. (C) TRUE: test $(0, 0)$: $0 + 0 = 0 < 8$ ✓. (D) FALSE: rewrite $x + 2y = 8$ as $y = -\frac{1}{2}x + 4$, so slope is $-\frac{1}{2}$ (negative), not $+\frac{1}{2}$.
- 15) **Choice B is correct.** **8.5(G)** The segment starts at $x = 0$ and ends at $x = 4$. The domain includes all x -values in this range: $[0, 4]$.
- 16) **Choice A is correct.** **8.5(F)** Correct slope: $(6 - 2)/(3 - 1) = 4/2 = 2$. The student got $\frac{1}{2}$ by putting the run over the rise. Slope is rise over run, so the error is inverting rise (4) and run (2).
- 17) **Choice A is correct.** **8.5(B)** In $y = mx + b$, the slope m is the rate of change per unit of x . Here, for each additional hour worked, earnings increase by \$12, so the slope represents the hourly wage.
- 18) **Choice A is correct.** **8.5(C)** 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.
- 19) **The correct answer is A, C.** **8.2(A)** $\sqrt{169} = 13$ is rational (perfect square). The repeating decimal $0.777... = \frac{7}{9}$ is rational. The other values are irrational: $\sqrt{170}$ (non-perfect square), 2π (irrational multiple of π), and $\sqrt{2} + 1$ (irrational plus rational is irrational).
- 20) **Choice A is correct.** **8.7(C)** From $1^2 + (\sqrt{3})^2 = c^2$, we get $1 + 3 = 4$, so $c = \sqrt{4} = 2$ (the 30-60-90 triangle leg ratios).
- 21) **Choice B is correct.** **8.7(D)** Distance = $\sqrt{(3-0)^2 + (4-0)^2} = \sqrt{9+16} = \sqrt{25} = 5$ miles. (This is a 3-4-5 Pythagorean triple.)
- 22) **Choice B is correct.** **8.1(A)** When parallel lines are cut by a transversal, corresponding angles are congruent. So the other angle also measures 70° .
- 23) **Choice C is correct.** **8.6(A)** $396 = \frac{1}{3} \times B \times 12 \Rightarrow B = \frac{396 \times 3}{12} = \frac{1188}{12} = 99 \text{ cm}^2$.
- 24) **Choice C is correct.** **8.10(D)** Decompose: rectangle and trapezoid. Rectangle area = $10 \times 4 = 40 \text{ m}^2$. Trapezoid area = $\frac{1}{2}(6 + 10) \times 3 = 24 \text{ m}^2$. Total = $40 + 24 = 64 \text{ m}^2$.



Hi, Grade 8 Math Star!

◇ You finished this practice set with real effort. Grade 8 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 8 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 8 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 8 Math Friend

PRACTICE TODAY, ACHIEVE TOMORROW!

GRADE
8

Give your child the edge they need with **3 full-length** Grade 8 Math practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, boosting confidence, and preparing for success on test day!



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
- ✓ 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!



2 Extra Online Practice Tests Included!

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

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PRACTICE. PREPARE. SUCCEED.



Testinar

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