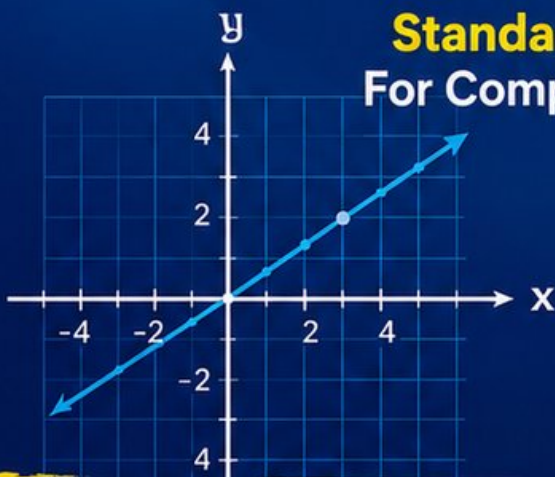
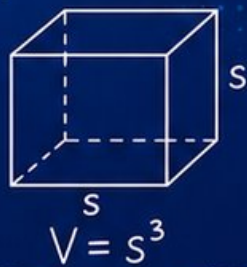


9 Texas STAAR Grade 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



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



9 PRINTED TESTS

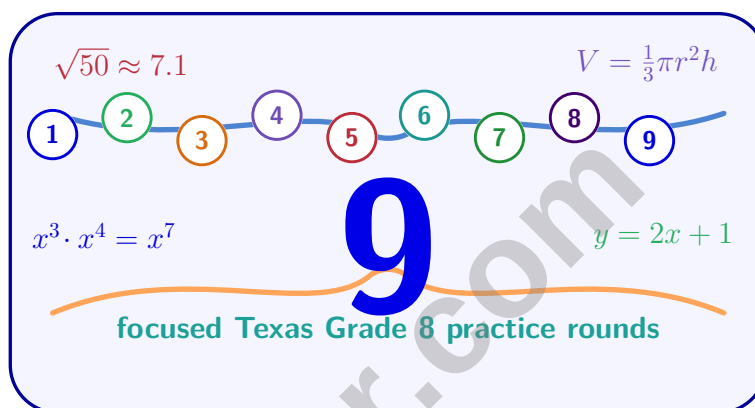


2 ONLINE TESTS

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

9 Texas STAAR Grade 8 Math Practice Tests

Texas Practice Rounds for Real Numbers, Functions, Geometry, and Data Fluency



Nine 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!

Nine focused rounds for sharper STAAR math thinking

This book gives you nine 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 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.

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?

Nine STAAR 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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& answers

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1) A line has slope 3 and passes through the point (1, 7). Which equation represents this line?

☐ A. $y = 3x + 4$

☐ C. $y = 3x - 1$

☐ B. $y = 3x + 7$

☐ D. $y = 3x + 1$

2) What is the slope of a line that is perpendicular to the line $y = 2x + 5$?

☐ A. 2

☐ C. $-\frac{1}{2}$

☐ B. $\frac{1}{2}$

☐ D. -2

3) Solve for x : $2(x + 3) = 3(x - 1)$

☐ A. $x = 9$

☐ C. $x = -3$

☐ B. $x = 3$

☐ D. $x = 1$

4) A student solves $-5x \leq 15$ and gets $x \leq -3$. Which explains the error?

☐ A. Did not flip inequality☐ C. Did not subtract first☐ B. Divided incorrectly☐ D. No error

5) If a figure is rotated 360° about the origin, what happens to the figure?

☐ A. It is reduced in size by one-fourth☐ D. It returns to its original position☐ B. It is reflected across the origin

and orientation

☐ C. It moves to a different quadrant

6) In the list 5.2×10^{-2} , 5.2×10^0 , 5.2×10^2 , 5.2×10^{-1} , what is the exponent of the smallest number?



7) Find the value of $\sqrt{144}$.

8) Which interval contains $2 + \sqrt{3}$?

☐ A. Between 2 and 3

☐ B. Greater than 5

☐ C. Between 4 and 5

☐ D. Between 3 and 4

9) If $x^3 = 125$, what is x ?

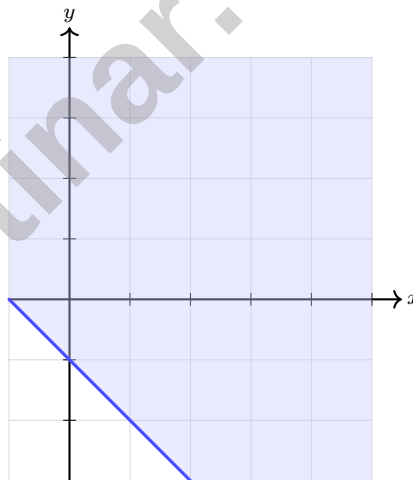
☐ A. 4

☐ B. 7

☐ C. 6

☐ D. 5

10)



The line shown has equation $y = -x - 1$. With shading above, the inequality is:

☐ A. $y > -x - 1$

☐ B. $y < -x - 1$

☐ C. $y \geq -x - 1$

☐ D. $y \leq -x - 1$



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11) Which table represents a function?

Table A:

x	1	2	2	3
y	4	5	6	7

Table B:

x	1	2	3	4
y	2	4	6	8

- ☐ A. Table A, because it has more inputs.
☐ B. Table B, because each input has exactly one output.
☐ C. Both tables are functions.
☐ D. Neither table is a function.

12) $S(m) = 500 + 25m$ and table $(0, \$600)$, $(3, \$675)$, $(6, \$750)$. Which starts with more money?

m	0	3	6
Table function	\$600	\$675	\$750

- ☐ A. S
☐ B. Table function
☐ C. Both same.
☐ D. Cannot be determined.

13) A right triangle has legs of 20 and 21. What is the hypotenuse?

- ☐ A. 29
☐ B. 41
☐ C. 400
☐ D. 1

14) What is the sum of the interior angles of a decagon (10-sided polygon)?

- ☐ A. 1800°
☐ B. 1260°
☐ C. 1620°
☐ D. 1440°



1) A figure is translated 6 units left and 3 units up. Which rule describes this translation?

☐ A. $(x, y) \rightarrow (x - 6, y + 3)$

☐ C. $(x, y) \rightarrow (x - 6, y - 3)$

☐ B. $(x, y) \rightarrow (x + 6, y - 3)$

☐ D. $(x, y) \rightarrow (x + 6, y + 3)$

2) A school's two-way table tracks 420 students:

	Honors	Regular	Total
9th Grade	63	147	210
10th Grade	84	126	210
Total	147	273	420

What percentage of all students are 9th-graders in honors classes?

☐ A. $\approx 15\%$

☐ C. $\approx 30\%$

☐ B. $\approx 25\%$

☐ D. $\approx 35\%$

3) A decorative shape consists of a cube with side 5 cm topped with a square pyramid (same base, height 5 cm). Which choice is closest to the total volume?

☐ A. 125 cm^3

☐ C. 208 cm^3

☐ B. 166 cm^3

☐ D. 250 cm^3

4) A patio is shaped like a hexagon decomposed into a rectangle (12 ft by 8 ft) and two congruent right triangles (legs 6 ft and 4 ft each). What is the total area?

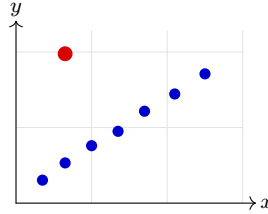
☐ A. 72 ft^2

☐ C. 96 ft^2

☐ B. 84 ft^2

☐ D. 120 ft^2

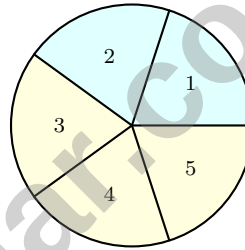




5)

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



6)

A spinner has 5 equal sections numbered 1–5. Two sections (1 and 2) are shaded. If you spin once, what is the probability of landing on a shaded section?

- ☐ A. $\frac{1}{5}$
☐ C. $\frac{3}{5}$
☐ B. $\frac{2}{5}$
☐ D. $\frac{4}{5}$

7) Data set: $\{100, 102, 104, 106, 108\}$ (mean = 104). Calculate MAD.

- ☐ A. 1.6
 ☐ C. 3
☐ B. 2
 ☐ D. 2.4



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1) A payday loan charges \$15 for every \$100 borrowed for 2 weeks. What is the APR equivalent?

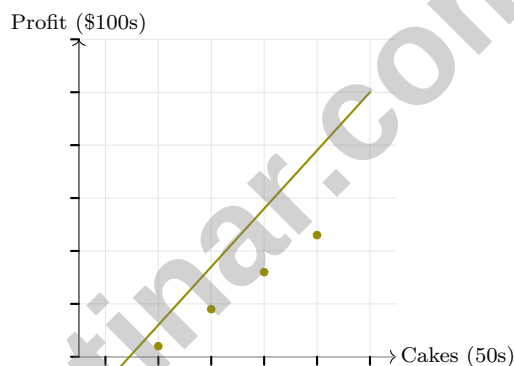
☐ A. 15%

☐ C. 390%

☐ B. 30%

☐ D. 780%

2) A square pyramid-shaped roof covers a building with a square base of side length 10 m. The slant height is 13 m. What is the lateral surface area (the four triangular sides)?

☐ A. 130 m²
☐ C. 360 m²
☐ B. 260 m²
☐ D. 520 m²


3)

A bakery's profit model is $P = 3.2c - 250$, where P is profit and c is the number of cakes sold. How many whole cakes must be sold to achieve at least a \$500 profit?

☐ A. 156 cakes

☐ C. 235 cakes

☐ B. 172 cakes

☐ D. 281 cakes


4) Evaluate $9x^2 - 16$ when $x = 2$.

5) Which function is NOT proportional (i.e., does not pass through the origin)?

☐ A. $y = 3x$

☐ C. $y = 2x + 1$

☐ B. $y = 5x$

☐ D. $y = \frac{1}{2}x$

6) A right triangle has legs of 14 and 48. Identify the hypotenuse from the choices.

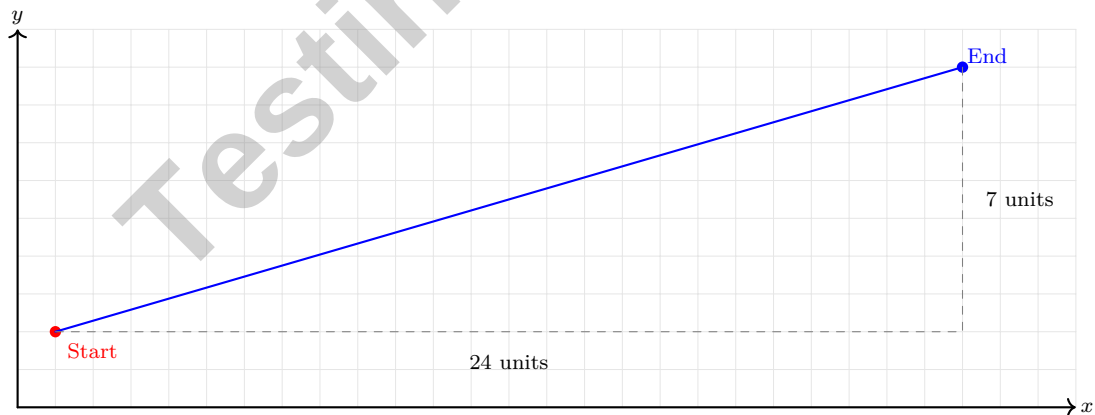
☐ A. 50

☐ C. 34

☐ B. 62

☐ D. 52

7) A hiker's GPS shows the horizontal distance traveled is 24 units and the vertical distance is 7 units. Using the Pythagorean Theorem, what is the total straight-line distance?



☐ A. 31 units

☐ C. 25 units

☐ B. $\sqrt{625}$ units

☐ D. $\sqrt{500}$ units



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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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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (8.5(B)) Using $y = mx + b$ with $m = 3$ and point $(1, 7)$: $7 = 3(1) + b \Rightarrow b = 4$. Equation: $y = 3x + 4$.
- 2) **Choice C is correct.** (8.5(B)) The slope of the given line is 2. The perpendicular slope is $-\frac{1}{2}$ (negative reciprocal).
- 3) **Choice A is correct.** (8.8(A)) Expand: $2x + 6 = 3x - 3$. Subtract $2x$ and add 3: $9 = x$, so $x = 9$.
- 4) **Choice A is correct.** (8.8(A)) Dividing by -5 requires flipping: $x \geq -3$, not $x \leq -3$.
- 5) **Choice D is correct.** (8.10(A)) A full 360° rotation completes one full turn, bringing the figure back unchanged. This is the identity transformation.
- 6) **The correct answer is -2 .** (8.2(C)) With the same coefficient, the smallest power has the smallest exponent: -2 .
- 7) **The correct answer is 12.** (8.2(A)) Since $12 \times 12 = 144$, $\sqrt{144} = 12$.
- 8) **Choice D is correct.** (8.2(D)) $\sqrt{3} \approx 1.73$, so $2 + \sqrt{3} \approx 3.73$, which lies between 3 and 4.
- 9) **Choice D is correct.** (8.2(B)) $5 \times 5 \times 5 = 125$, so $\sqrt[3]{125} = 5$.
- 10) **Choice C is correct.** (8.8(B)) SOLID line (includes boundary) with shading ABOVE means $y \geq -x - 1$.
- 11) **Choice B is correct.** (8.5(G)) Table A has input 2 appearing twice with different outputs (5 and 6), so it is not a function. Table B has each unique input paired with exactly one output.
- 12) **Choice B is correct.** (8.5(F)) $S(0) = 500$. Table shows 600 at $m = 0$. Since $600 > 500$, table function starts higher.
- 13) **Choice A is correct.** (8.7(C)) Using $a^2 + b^2 = c^2$: $20^2 + 21^2 = 400 + 441 = 841$, so $c = 29$ (the 20-21-29 triple).
- 14) **Choice D is correct.** (8.8(D)) For a decagon ($n = 10$): $(10 - 2) \times 180 = 8 \times 180 = 1440^\circ$. ✓
- 15) **Choice D is correct.** (8.12(A)) Loan X costs \$200 in interest; Loan Y costs \$240. Loan X is cheaper overall.
- 16) **Choice C is correct.** (8.2(A)) Product rule: add exponents. $x^3 \cdot x^2 = x^{3+2} = x^5$, not x^6 (which is the error of multiplying exponents).
- 17) **Choice D is correct.** (8.2(C)) Rewrite: $3 \times 10^8 + 0.05 \times 10^8 = (3 + 0.05) \times 10^8 = 3.05 \times 10^8$.
- 18) **Choice C is correct.** (8.4(B)) Slope $k = \frac{8}{3}$. Equation: $y = \frac{8}{3}x$. At $x = 6$: $y = \frac{8}{3}(6) = 16$.
- 19) **Choice D is correct.** (8.5(F)) 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.
- 20) **Choice A is correct.** (8.10(D)) Sum: $x^2 + 5x + 5x + 25 = x^2 + 10x + 25 = (x + 5)^2$.
- 21) **Choice A is correct.** (8.5(F)) $y = \frac{7}{2}x - 6$ is linear with slope $\frac{7}{2}$ and y -intercept -6 . Option B expands to $y = x^2 - x$ (nonlinear), and C and D are exponential and rational functions.
- 22) **The correct answer is A,B.** (8.6(A)) Cylinder $V = 3.14 \times 9 \times 7 = 197.82 \text{ cm}^3$ (A correct); Cone $V = \frac{1}{3} \times 3.14 \times 9 \times 7 = 65.94 \text{ cm}^3$ (B correct). C is wrong (incorrect cylinder volume), D is wrong (that's the cylinder volume), E is wrong (cone is $\frac{1}{3}$ cylinder).
- 23) **Choice B is correct.** (8.5(C)) A flat section means the function is constant, so the temperature does not change. This occurs from noon to 6pm.
- 24) **Choice D is correct.** (8.10(B)) Rotation is a rigid motion that preserves lengths. If two segments are congruent before rotation, they remain congruent after rotation. Both still have their original lengths.
- 25) **Choice D is correct.** (8.10(C)) Original length: $\sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$. Dilated: $15 \times \frac{2}{3} = 10$.
- 26) **Choice C is correct.** (8.8(D)) Let angles be $3x$, $4x$, and $5x$. Sum: $3x + 4x + 5x = 180 \Rightarrow 12x = 180 \Rightarrow x = 15^\circ$. Smallest angle: $3x = 45^\circ$.
- 27) **Choice A is correct.** (8.7(D)) $d = \sqrt{(7 - 0)^2 + (24 - 0)^2} = \sqrt{49 + 576} = \sqrt{625} = 25$.
- 28) **Choice A is correct.** (8.4(C)) Slope $= \frac{-4 - 2}{3 - (-3)} = \frac{-6}{6} = -1$.



Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 9 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

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- | | |
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