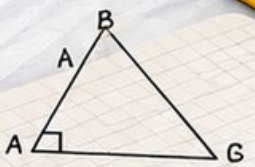
TEXAS STAAR

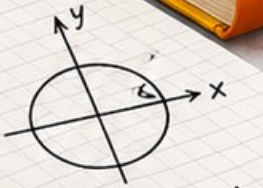
GRADE 8 MATH PRACTICE TESTS

5 PRINTED TESTS

2 ONLINE TESTS



$a^2 + b^2 = c^2$



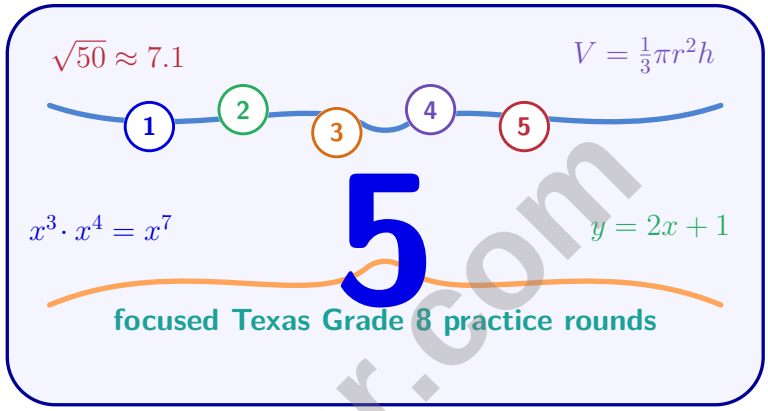
$y = mx + b$

Standards Aligned Problem Solving For Comprehensive Assessment Programs

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

5 Texas STAAR Grade 8 Math Practice Tests

Targeted STAAR Practice for Graphs, Functions, and Geometry



Five 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!

Five focused rounds for sharper STAAR math thinking

This book gives you five 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.

How to Use This Book

A five-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?

Five STAAR tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	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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1) A residual plot shows the residuals for a trend line fit to a data set. What would a residual plot with no clear pattern indicate?

☐ A. There are no residuals
☐ B. The trend line is a good fit
☐ C. The data is nonlinear
☐ D. The trend line is a poor fit

2) What two positive integers multiply to 12 and add to 7?

3) Look at the table. Which expression is **not** equivalent to x^6?

Option	Expression
A.	$(x^2)^3$
B.	$x^3 \cdot x^3$
C.	$x^8 \div x^2$
D.	$x^6 + x^0$

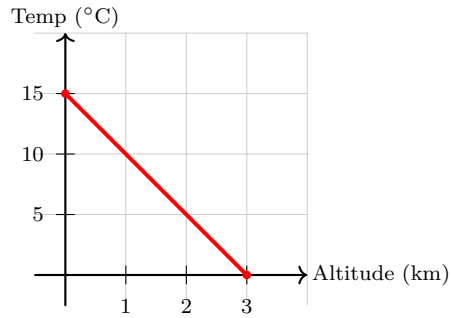
☐ A. Option A
☐ B. Option B
☐ C. Option C
☐ D. Option D

4) Does the table show values from the equation $y = 5x$?

x	1	2	3
y	5	10	15

☐ A. No, should be $y = 5 + x$
☐ B. No, should be $y = x + 5$
☐ C. Yes, each y-value is 5 times the matching x-value.
☐ D. No, missing $x = 0$

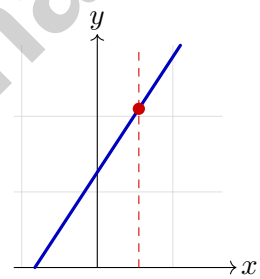
5) A graph shows temperature (in °C) versus altitude (in km). The line passes through $(0, 15)$ and $(3, 0)$.



What is the slope?

☐ A. -5°C per km
☐ B. 5°C per km
☐ C. $-\frac{1}{5}$°C per km
☐ D. 3°C per km

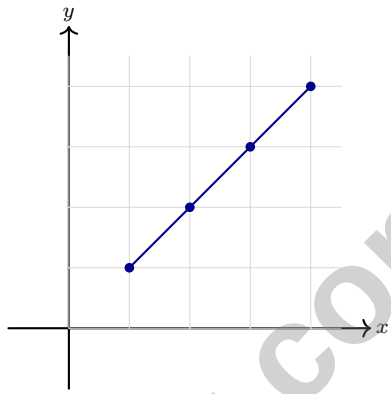
6) For the graph of $y = 2x + 3$, how many points can a vertical line intersect for a given x-value?



7) A vending machine contains 32 coins (dimes and quarters). The total value is \$5.30. How many dimes are there?

☐ A. 8
☐ B. 12
☐ C. 14
☐ D. 18

8) The graph shows function h. Which of the following is true?

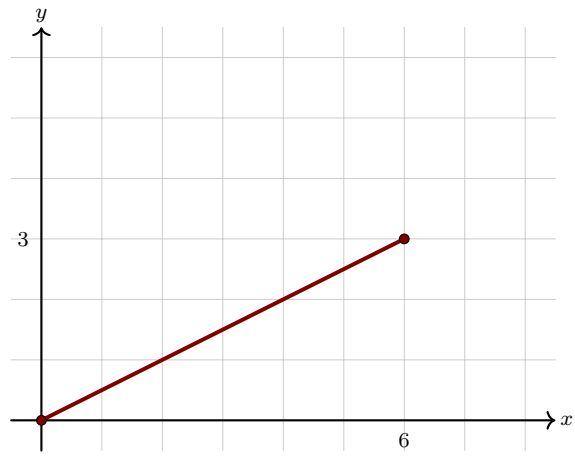


☐ A. $h(2) = 3$
☐ B. $h(1) = 1$
☐ C. $h(3) = 2$
☐ D. $h(4) = 3$

9) A music streaming service charges \$8 for premium features plus \$12 per month for access. Which equation represents the total cost T for m months of service?

☐ A. $T = 12m + 8$
☐ B. $T = 8m + 12$
☐ C. $T = 20m$
☐ D. $T = 8m - 12$

1)



What is the unit rate shown in the graph?

- ☐ A. 3 units of y per unit of x
- ☐ B. 2 units of y per unit of x
- ☐ C. $\frac{1}{2}$ unit of y per unit of x
- ☐ D. 6 units of y per unit of x

2) Which of these is a NONLINEAR function?

- ☐ A. $y = 0.5x - 10$
- ☐ B. $y = 15 - 2x$
- ☐ C. $y = -\frac{2}{3}x + 8$
- ☐ D. $y = x^3$

3) Simplify $7^{-4} \cdot 7^{6}$.

- ☐ A. 7^{-2}
- ☐ B. 7^{-10}
- ☐ C. 7^{3}
- ☐ D. 7^{2}

4) A store notices that for every 2 customers who enter, 1 item is sold. What is the slope of items sold versus customers?

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

5) A car traveling at 60 mph leaves 1 hour before a car traveling at 75 mph. How long does the faster car take to catch the slower car?

☐ A. 2 hours
☐ B. 3 hours
☐ C. 4 hours
☐ D. 5 hours

6) A cube-shaped storage container has a volume of 512 cubic feet. What is the side length of the cube?

7) If $f(x) = x - 3$ and $f(x) = 5$, what is x?

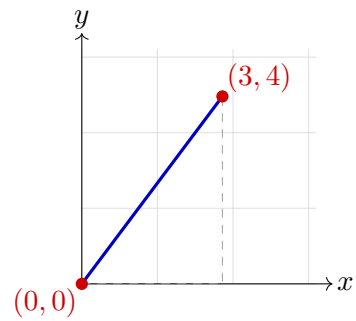
☐ A. 2
☐ B. 8
☐ C. 5
☐ D. 15

8) Expand $(2x - 5)(3x - 2)$.

☐ A. $5x^2 - 19x + 10$
☐ B. $6x^2 - 10$
☐ C. $6x^2 - 4x - 15x - 10$
☐ D. $6x^2 - 19x + 10$

9) Find $(1.2 \times 10^6) + (8 \times 10^5)$ in scientific notation.

1) Two points on a coordinate plane are located at $(0, 0)$ and $(3, 4)$. What is the distance between these two points?



☐ A. 5
☐ B. 7
☐ C. 12
☐ D. 25

2) A bank loan of \$10,000 at 5% simple interest is repaid in 5 equal annual installments. The total simple interest over the full term is \$2,500. How much principal and interest remains owed after making the first \$2,500 payment?

☐ A. \$8,000
☐ B. \$8,500
☐ C. \$10,000
☐ D. \$9,500

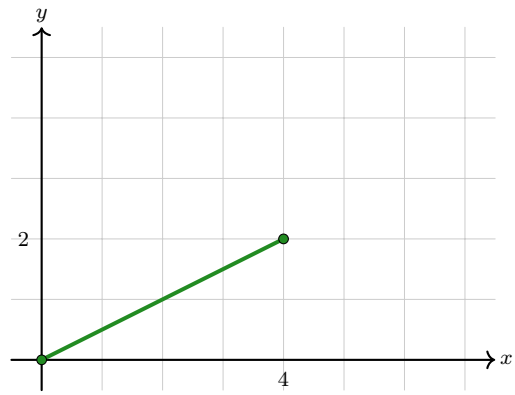
3) Simplify $\dfrac{(k^2)^3 \cdot k^{-1}}{k^5}$.

☐ A. k^{-5}
☐ B. k^2
☐ C. k^{10}
☐ D. $k^0 = 1$

4) If $x^3 = 512$, what is x?

☐ A. 7
☐ B. 10
☐ C. 9
☐ D. 8

5)



What is the constant of proportionality for this graph?

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

6) A cube has an edge length of 4 cm. What is its surface area?

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.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice B is correct.** 8.5(D) A residual plot with no clear pattern means residuals are scattered randomly and close to zero. This indicates the linear model explains the data well and assumptions are met.

2) **The correct answer is** $(3, 4)$ **.** 8.10(D) The integers 3 and 4 multiply to 12 and add to 7.

3) **Choice D is correct.** 8.2(A) (D) is $x^6 + 1$, not x^6, because addition is not an exponent law.

4) **Choice C is correct.** 8.4(B) Each value: $y = 5(1) = 5$, $y = 5(2) = 10$, $y = 5(3) = 15$. All match the equation $y = 5x$.

5) **Choice A is correct.** 8.4(C) Slope $= \dfrac{0-15}{3-0} = \dfrac{-15}{3} = -5°$C per km. Temperature decreases 5 degrees for every 1 km increase in altitude.

6) **The correct answer is** 1 **.** 8.5(G) A nonvertical line has exactly one y-value for each x-value.

7) **Choice D is correct.** 8.7(A) Let d = dimes and q = quarters. Then $d + q = 32$ and $10d + 25q = 530$ in cents. Substitute $d = 32 - q$: $10(32 - q) + 25q = 530$, so $320 + 15q = 530$. Thus $q = 14$ and $d = 18$.

8) **Choice B is correct.** 8.5(G) From the graph, at $x = 1$ the point is at $(1, 1)$, so $h(1) = 1$. Options A, C, and D are incorrect based on the plotted points.

9) **Choice A is correct.** 8.5(B) One-time premium feature fee is \$8 (intercept). Monthly service cost is \$12 (slope). Total is $T = 12m + 8$.

10) **Choice A is correct.** 8.5(C) The upward segment lasts 3 hours (0 to 3), and the downward segment also lasts 3 hours (5 to 8). Since the graph starts and ends at 0, the same height gained is later lost over the same amount of time, so the absolute values of the slopes are equal.

11) **Choice B is correct.** 8.10(B) Figures A and C are both 4×2 rectangles. Figure B is a 2×2 square, so it is not congruent to either rectangle.

12) **Choice A is correct.** 8.10(C) Reflecting across the x-axis maps $(1, 2) \to (1, -2)$. Translating right 1 and up 1 gives $(2, -1)$, which is a vertex of the image. Checking the other vertices shows the same rule maps the whole rectangle correctly.

13) **Choice B is correct.** 8.8(D) The angles sum to 180°: $(n + 15) + (n + 20) + (2n + 25) = 180$. Thus $4n + 60 = 180$, so $4n = 120$ and $n = 30$.

14) **Choice B is correct.** 8.7(C) From $(\sqrt{7})^2 + 3^2 = c^2$, we get $7 + 9 = 16$, so $c = \sqrt{16} = 4$.

15) **Choice A is correct.** 8.7(D) By the Pythagorean Theorem, $c^2 = 6^2 + 8^2 = 36 + 64 = 100$. Taking the square root: $c = \sqrt{100} = 10$.

16) **Choice C is correct.** 8.1(A) Co-interior angles sum to 180°: $(m - 15) + (m + 35) = 180 \Rightarrow 2m + 20 = 180 \Rightarrow 2m = 160 \Rightarrow m = 80°$.

17) **Choice B is correct.** 8.6(A) $V = \frac{1}{3} \times (8 \times 8) \times 6 = \frac{1}{3} \times 64 \times 6 = 128$ cm^3.

18) **Choice B is correct.** 8.10(D) For a semicircle on top of a rectangle, the top edge of the rectangle is NOT part of the perimeter outline; it's replaced by the semicircular arc. The student added both, overcounting.

19) **Choice D is correct.** 8.8(D) Each interior angle: $\frac{(30-2)\times 180}{30} = \frac{28\times 180}{30} = \frac{5040}{30} = 168°$.

20) **Choice A is correct.** 8.11(A) Outliers in health data can indicate genuine health risks or data recording errors. Ignoring (B) or removing (C) the outlier without investigation risks missing important health concerns. The outlier should prompt further examination.

21) **Choice C is correct.** 8.5(C) Row-conditional frequency: among HR (row total 120), remote workers are 35. Denominator is the row total, not column or grand total.

22) **The correct answer is A,C.** 8.5(F) Option A: Lines $y = 3x + 1$ and $y = 3x - 2$ are parallel (same slope 3, different intercepts). Option B: Different slopes (3 and $\frac{1}{3}$), so one intersection. Option C: Both equations have the form $2x + y = k$ with $k = 4$ and $k = 6$ (parallel). Option D: Lines $y = 2x$ and $x + y = 6$ have different slopes, so one intersection. Option E: Lines $y = x$ and $y = -x$ have different slopes, intersecting at the origin.

23) **Choice B is correct.** 8.11(B) Absolute deviations are $|5 - 10| = 5$, $|8 - 10| = 2$, $|12 - 10| = 2$, and $|15 - 10| = 5$. The sum is 14, so the MAD is $14 \div 4 = 3.5$.

Author's Note

A Page for Persistence

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 5 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

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 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!

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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