

6 Texas STAAR

GRADE 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving For
Comprehensive Assessment Programs



6 PRINTED
TESTS



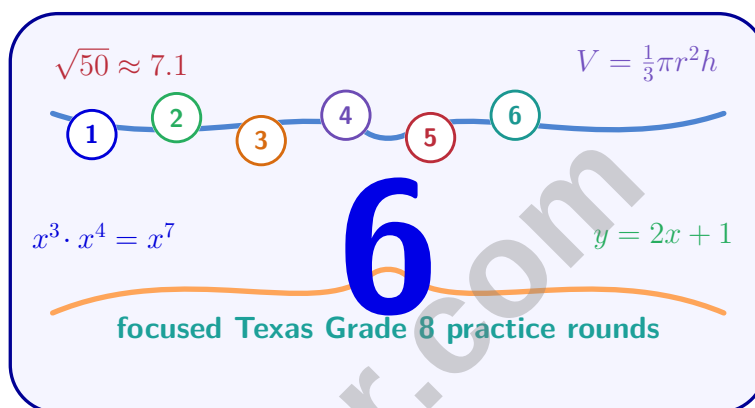
2 ONLINE
TESTS



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

6 Texas STAAR Grade 8 Math Practice Tests

Six Grade 8 Practice Tests for Readiness, Review, and Stamina



Six 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!

Six focused rounds for sharper STAAR math thinking

This book gives you six 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 six-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?

Six STAAR tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 4–6	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.

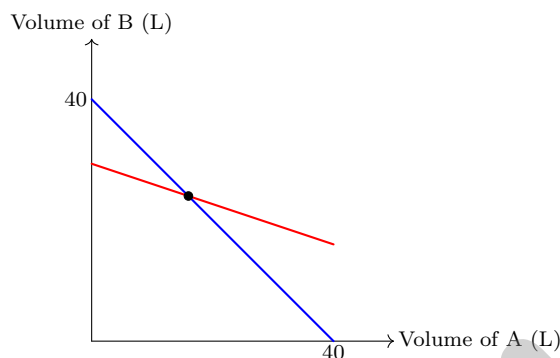


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Table of Contents

★ Practice Test 1	_____	16
★ Practice Test 2	_____	33
★ Practice Test 3	_____	49
★ Practice Test 4	_____	66
★ Practice Test 5	_____	81
★ Practice Test 6	_____	99
Practice Test Answer Keys	_____	117
Practice Test Answers and Explanations	_____	121

- 1) A juice bar mixes two juices. Juice A is 25% apple. Juice B is 75% apple. The shop wants 40 liters of a 55% apple blend. The graph below shows the relationship between volumes of A and B.



Which point represents the solution?

- ☐ A. (10, 30) ☐ C. (16, 24)
☐ B. (20, 20) ☐ D. (30, 10)

- 2) For $y = 2.5x + 5$, what is the y -intercept?

Numbers	
Rational	Irrational
$\frac{1}{2}$, 0.5	$\sqrt{2}$, π

3)

Which number should be placed in the Rational section?

- ☐ A. $\sqrt{13}$ ☐ C. $-\frac{9}{2}$
☐ B. $2 + \sqrt{5}$ ☐ D. $\sqrt{\pi}$



4) A bank offers 6% simple interest. If you deposit \$5,000 for 18 months, how much interest will you earn?

☐ A. \$300☐ B. \$900☐ C. \$600☐ D. \$450

5) Express 0.0072 in scientific notation.

☐ A. 0.72×10^{-2} ☐ B. 7.2×10^3 ☐ C. 7.2×10^{-4} ☐ D. 7.2×10^{-3}

6) Which two perfect squares help locate $\sqrt{72}$?

☐ A. 36 and 49☐ B. 49 and 64☐ C. 81 and 100☐ D. 64 and 81

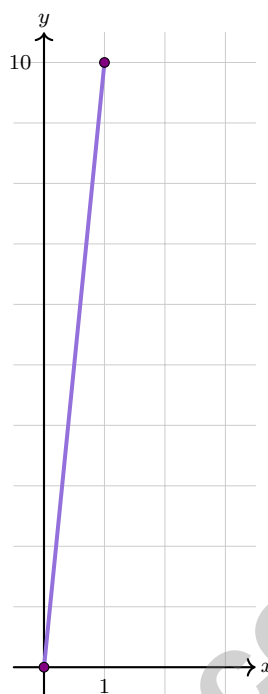
7) Simplify $5^0 \cdot n^7 \cdot n^{-7}$.

☐ A. n^{14} ☐ B. n ☐ C. $5n$ ☐ D. 1

8) If $x^2 = 144$ and $y^3 = 64$, what is $x + y$ (taking positive values)?

☐ A. 22☐ B. 18☐ C. 20☐ D. 16

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9)

The constant of proportionality is:

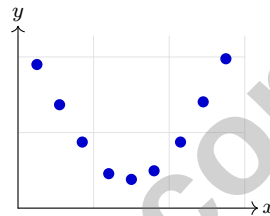
☐ A. 1☐ B. 5☐ C. 10☐ D. 20

1) $f(x) = \frac{1}{2}x + 3$ and $g(x) = \frac{1}{2}x - 2$. Which is correct?

- ☐ A. f has greater slope. ☐ C. Equal slopes, different intercepts.
☐ B. g has greater slope. ☐ D. Functions identical.

2) Triangle ABC is similar to Triangle DEF . Side $AB = 4$ cm, $BC = 5$ cm, $CA = 6$ cm. The perimeter of DEF is 45 cm. Find the length of EF .

- ☐ A. 15 cm ☐ C. 22.5 cm
☐ B. 18 cm ☐ D. 10 cm



3)

A scatter plot of outdoor temperature ($^{\circ}\text{C}$) versus energy consumption (kWh) for a city shows a U-shaped curve: energy use is high on very cold days, lower on mild days, and high again on very hot days. This pattern violates the assumption of:

- ☐ A. Random data collection ☐ C. Positive correlation always
☐ B. Linear (straight-line) relationship ☐ D. No outliers in the data



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4) In a two-way table of 500 voters by income and voting choice:

	Yes	No	Total
High Income	150	100	250
Low Income	120	130	250
Total	270	230	500

A student claims: “Since both income groups total 250, there is no association.” Is this reasoning correct?

- ☐ A. Yes; equal row totals guarantee independence.
 ☐ C. Yes; balancing the sample sizes shows no bias.
- ☐ B. No; equal row totals don't ensure equal conditional frequencies.
 ☐ D. No; we must check the yes vote totals, which differ.
- 5) If you add an outlier to a data set, how will it usually affect the MAD?

- ☐ A. The MAD will become zero
 ☐ C. The MAD will decrease
- ☐ B. The MAD will stay the same
 ☐ D. The MAD will increase

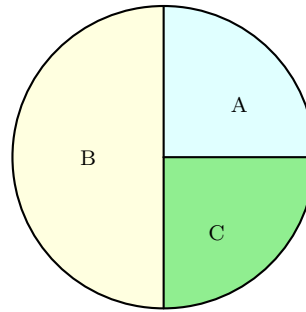
6)

	Fiction	Science
Hardcover	8	5
Paperback	4	3

A library shelf has the books shown. If two books are selected without replacement, what is the probability both are hardcover fiction?

- ☐ A. $\frac{8}{20}$
☐ C. $\frac{28}{400}$
- ☐ B. $\frac{64}{400}$
☐ D. $\frac{14}{95}$





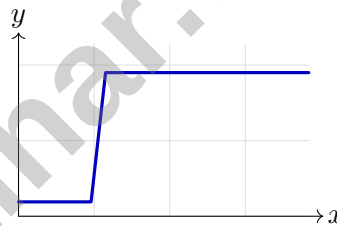
1)

The spinner is divided into three sections. Section A covers 90° , section B covers 180° , and section C covers 90° . What is the probability of landing on section B?

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

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

2) A graph displays cumulative rainfall over a month. Which scenario matches a graph with a steep jump, then a flat section?

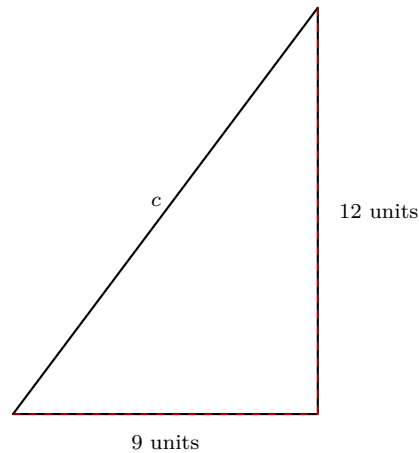


- ☐ A. Heavy rain one day, then no rain for several days
☐ B. Light rain every day for a month
☐ C. No rain for a week, then a single light drizzle
☐ D. Rain that decreases over time at a constant rate



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- 3) A right triangle has legs of 9 units and 12 units. What is the length of the hypotenuse?



- ☐ A. 15 units
- ☐ B. 21 units
- ☐ C. $\sqrt{200}$ units
- ☐ D. 3 units
- 4) Which statement is true about the exterior angles of any convex polygon?
- ☐ A. Each exterior angle measures less than 90° .
- ☐ B. The sum of all exterior angles is always 360° .
- ☐ C. Exterior angles are always equal in any polygon.
- ☐ D. The sum depends on the number of sides.



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 C is correct.** **8.7(A)** Let a = liters of Juice A and b = liters of Juice B. Then $a + b = 40$ and $0.25a + 0.75b = 0.55(40) = 22$. Substitute $b = 40 - a$: $0.25a + 0.75(40 - a) = 22$, so $30 - 0.50a = 22$. Thus $a = 16$ and $b = 24$.
- 2) **The correct answer is 5.** **8.5(D)** The constant term is the y -intercept, so it is 5.
- 3) **Choice C is correct.** **8.2(A)** Only $-\frac{9}{2}$ is rational (a fraction of two integers). The others are irrational: $\sqrt{13}$ is a non-perfect-square root, $2 + \sqrt{5}$ is a sum involving an irrational, and $\sqrt{\pi}$ is the root of an irrational.
- 4) **Choice D is correct.** **8.12(A)** 18 months = 1.5 years. $I = 5000 \times 0.06 \times 1.5 = \450 .
- 5) **Choice D is correct.** **8.2(C)** Move the decimal 3 places right to get 7.2; the exponent is -3 .
- 6) **Choice D is correct.** **8.2(B)** $8^2 = 64$ 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.
- 7) **Choice D is correct.** **8.2(A)** $5^0 = 1$; $n^7 \cdot n^{-7} = n^{7-7} = n^0 = 1$. Product: $1 \cdot 1 = 1$.
- 8) **Choice D is correct.** **8.2(B)** $x = \sqrt{144} = 12$ and $y = \sqrt[3]{64} = 4$, so $x + y = 12 + 4 = 16$.
- 9) **Choice C is correct.** **8.4(B)** $k = \frac{10}{1} = 10$. The line is very steep, passing through $(0, 0)$ and $(1, 10)$.
- 10) **Choice A is correct.** **8.5(F)** The two lines intersect at the point marked on the graph. At this point, both $x = 1$ and $y = 2$. Verify: $y = 1 + 1 = 2$ ✓ and $1 + 2 = 3$ ✓.
- 11) **Choice B is correct.** **8.5(F)** The term n^2 makes this a quadratic function (nonlinear). Linear functions have only the first power of the variable.
- 12) **Choice D is correct.** **8.4(C)** Change in altitude is -2000 feet over 5 minutes. Slope = $\frac{-2000}{5} = -400$ feet per minute.
- 13) **Choice C is correct.** **8.5(G)** At $x = 0$, the point on the graph is at height $y = 4$. Therefore, $r(0) = 4$.
- 14) **Choice D is correct.** **8.7(B)** A triangular pyramid has 4 triangular faces (one base, three lateral). If each has area 10 cm^2 , total surface area = $4 \times 10 = 40 \text{ cm}^2$.
- 15) **Choice C is correct.** **8.10(A)** A 90° counterclockwise rotation uses $(x, y) \rightarrow (-y, x)$. So $(3, -2) \rightarrow (-(-2), 3) = (2, 3)$.
- 16) **Choice D is correct.** **8.5(B)** Using point-slope form, then converting: $5 = -3(2) + b$ gives $b = 11$, so $y = -3x + 11$.
- 17) **Choice A is correct.** **8.8(A)** Subtract 1.5: $0.2x = 1$. Divide by 0.2: $x = 5$.
- 18) **Choice A is correct.** **8.8(A)** Multiply by -2 (FLIP): $x + 5 \geq -6$. Subtract 5: $x \geq -11$.
- 19) **Choice A is correct.** **8.8(B)** At most \$300 means the budget is less than or equal to 300. The solid boundary line includes the exact limit of \$300.
- 20) **The correct answer is A,C.** **8.3(A)** Correct: (A) All linear measurements (sides, perimeter) are multiplied by 2.5. (C) Area is multiplied by $(2.5)^2 = 6.25$. Incorrect: (B) Angles are congruent in dilation, not scaled. (D) Perimeter is multiplied, not divided, by 2.5. (E) Dilation preserves shape; polygon type does not change.
- 21) **Choice B is correct.** **8.7(C)** The 3-4-5 triple scaled by 10 is 30-40-50. The diagonal $d^2 = 30^2 + 40^2 = 900 + 1600 = 2500$, so $d = 50$ m.
- 22) **The correct answer is $\frac{1}{2}$.** **8.12(D)** Sample space: HH, HT, TH, TT. Exactly one heads: HT, TH. That's 2 of 4. $P = \frac{1}{2}$.
- 23) **Choice B is correct.** **8.6(A)** The radius is half the diameter: $r = 8 \div 2 = 4$ in. Cylinder volume: $V = \pi r^2 h = 3.14 \times 4^2 \times 15$.
- 24) **Choice C is correct.** **8.5(D)** The line passes through $(0, 1)$ and $(4, 5)$. Slope = $\frac{5-1}{4-0} = \frac{4}{4} = 1$.
- 25) **The correct answer is 132.** **8.8(C)** Line leader: 12 choices. Helper: 11 remaining choices. Total: $12 \times 11 = 132$ ways.
- 26) **Choice C is correct.** **8.2(D)** $\sqrt{18} = 3\sqrt{2} \approx 3 \times 1.41 = 4.23$.



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Hi, Thoughtful Reader!

◇ A strong Grade 8 test taker is also a strong reader. You practiced turning words, tables, graphs, and diagrams into math decisions. ◇

★ **Remember this:** That skill grows each time you slow down enough to ask what the problem is really telling you and what it is really asking for. This version gave you 6 opportunities to rehearse test-day habits. ★

Reader-to-Solver Skills

- **Circle the Ask:** Make the target visible.
- **Sort Information:** Separate useful facts from extra words.
- **Match Units:** Keep quantities connected.
- **Answer Fully:** Include the value and what it means.

Grade 8 test-day tip: After solving, reread only the final question. Make sure your answer matches it exactly.

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

Jay Daie

Your Reading-and-Math Helper

PRACTICE TODAY. ACHIEVE TOMORROW.

6

Give your child the confidence and skills they need with **6 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 | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Pythagorean Theorem |
| ✓ Ratios & Proportional Relationships | ✓ Volume & Surface Area |
| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| | ✓ And More! |



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