

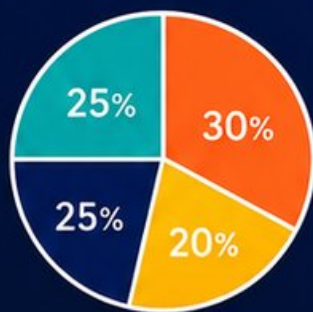
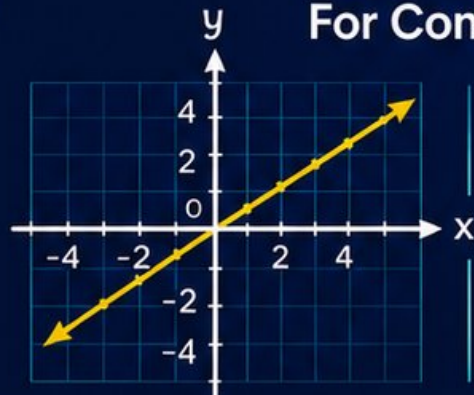
Texas STAAR

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

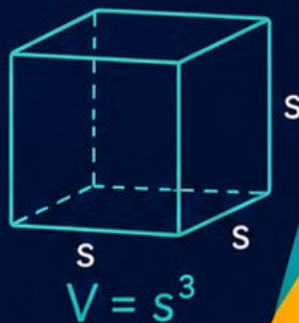


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



**4 PRINTED
TESTS**



**2 ONLINE
TESTS**

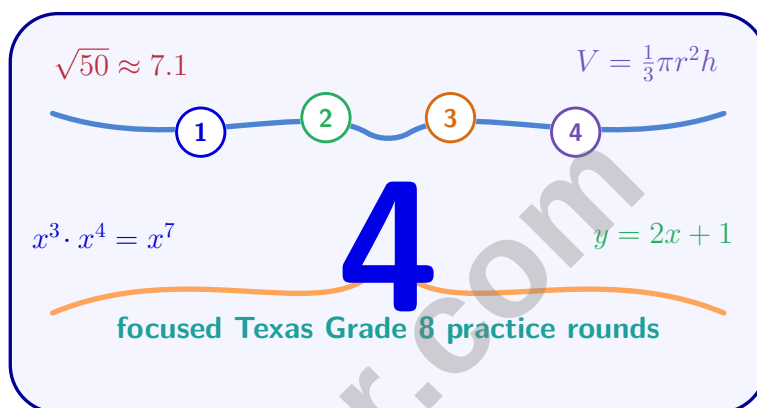


Use these **two additional online practice tests**
for extra review after the printed tests in this book.



4 Texas STAAR Grade 8 Math Practice Tests

Complete STAAR Practice with Focused Review and Clear Explanations



Four 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!

Four focused rounds for sharper STAAR math thinking

This book gives you four 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 four-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?

Four STAAR tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	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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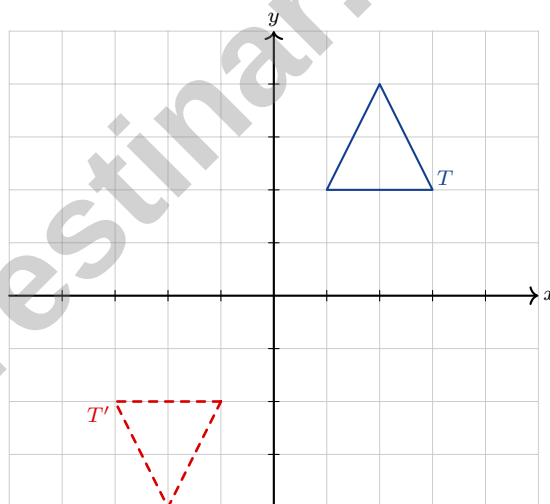
- 1) A two-way table tracks 400 students by extracurricular activity:

	Sports	No Sports	Total
Music	120	80	200
No Music	100	100	200
Total	220	180	400

What is the marginal relative frequency for students who do sports, as a decimal?

- ☐ A. 0.27 ☐ C. 0.55
☐ B. 0.45 ☐ D. 0.73
- 2) A concert venue sells adult tickets for \$15 and student tickets for \$8. If 120 total tickets were sold for \$1,520, how many student tickets were sold?

- ☐ A. 40 ☐ C. 80
☐ B. 60 ☐ D. 100



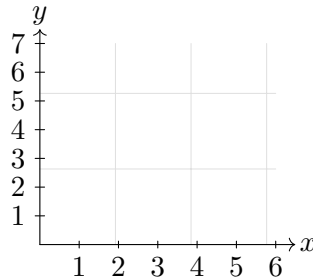
3)

Triangle T (navy) is transformed to T' (red). Which transformation is most likely shown?

- ☐ A. Rotation 180° ☐ C. Translation left 4, down 4
☐ B. Reflection across line $y = x$ ☐ D. Reflection across the x -axis



- 4) Graph the proportional relationship $y = \frac{3}{2}x$ by finding three points and identifying the slope. What is the slope?



- 5) In triangle ABC with angles $\angle A = 55^\circ$, $\angle B = 70^\circ$, and $\angle C = 55^\circ$, the exterior angle at vertex B measures how many degrees?
- ☐ A. 70° ☐ C. 125°
☐ B. 110° ☐ D. 180°
- 6) A data set has a linear relationship modeled by the line $y = 0.5x + 10$. Which point lies exactly on the trend line?
- ☐ A. $(2, 10)$ ☐ C. $(6, 12)$
☐ B. $(8, 15)$ ☐ D. $(4, 12)$
- 7) Two similar trapezoids have parallel sides. In trapezoid T_1 , the bases are 10 cm and 6 cm. In trapezoid T_2 , the longer base is 15 cm. What is the length of the shorter base of T_2 ?
- ☐ A. 8 cm ☐ C. 10 cm
☐ B. 9 cm ☐ D. 12 cm

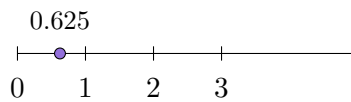


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- 8) A bus travels according to $d(t) = 55t$, where d is distance in miles and t is time in hours. How far has the bus traveled after 3 hours?

- ☐ A. 55 miles
☐ B. 110 miles
☐ C. 165 miles
☐ D. 185 miles

9)



Which number can be written as a terminating decimal?

- ☐ A. $\sqrt{5}$
☐ B. $1 + \pi$
☐ C. $\sqrt{e}$ (where $e \approx 2.718$)
☐ D. $\frac{5}{8}$
- 10) What is $0.3\overline{2}$ as a fraction?
- ☐ A. $\frac{3}{20}$
☐ B. $\frac{32}{100}$
☐ C. $\frac{32}{99}$
☐ D. $\frac{29}{90}$
- 11) Which number is irrational?
- ☐ A. $\frac{7}{2}$
☐ B. 3
☐ C. 0.25
☐ D. $\sqrt{5}$
- 12) Which is the best estimate of $\frac{\pi}{2}$?
- ☐ A. 1.27
☐ B. 3.14
☐ C. 2.14
☐ D. 1.57



1) For the inequality $y < -2x + 5$, which statement about the boundary line is true?

- ☐ A. The boundary line is solid ☐ C. The boundary line is vertical
☐ B. The boundary line is dashed ☐ D. The boundary line is horizontal

2) Three points lie on the same line: $(1, 5)$, $(3, 9)$, and $(x, 13)$. What is the value of x ?

- ☐ A. 4 ☐ C. 6
☐ B. 7 ☐ D. 5

3) If $3^a \cdot 3^5 = 3^{12}$, what is the value of a ?

4) Two rectangles are considered separately. The first rectangle is x cm long and 5 cm wide. The second rectangle is y cm long and 5 cm wide. The sum of their perimeters is 56 cm, and the difference in their lengths is 2 cm. If $x > y$, what is x ?

- ☐ A. 8 cm ☐ C. 10 cm
☐ B. 12 cm ☐ D. 14 cm



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- 5) A library tracks 420 patrons by age and material preference:

	Books	Digital	Total
Youth (< 18)	140	70	210
Adult (≥ 18)	140	70	210
Total	280	140	420

Is there an association between age group and material preference? Why or why not?

- ☐ A. Yes; youth prefer books at $\frac{140}{210} = \frac{2}{3}$ while adults also do at $\frac{140}{210} = \frac{2}{3}$.
☐ B. Yes; youth prefer books more than adults.
☐ C. No; both groups prefer books at identical relative frequencies.
☐ D. No; the total for books (280) exceeds digital (140).
- 6) A path forms a rectangular frame: outer 25 m by 15 m, inner 20 m by 10 m. What is the area of the path only, in m²?

- 7) A fair coin is flipped and a fair die is rolled. What is the probability of getting tails AND rolling a 5 or 6?
- ☐ A. $\frac{1}{6}$
☐ B. $\frac{1}{4}$
☐ C. $\frac{2}{18}$
☐ D. $\frac{2}{6}$



1) In triangle ABC , the angle at A is twice the angle at B . The angle at C is 20° greater than the angle at B . Find angle A .

☐ A. 60°

☐ C. 100°

☐ B. 80°

☐ D. 120°

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

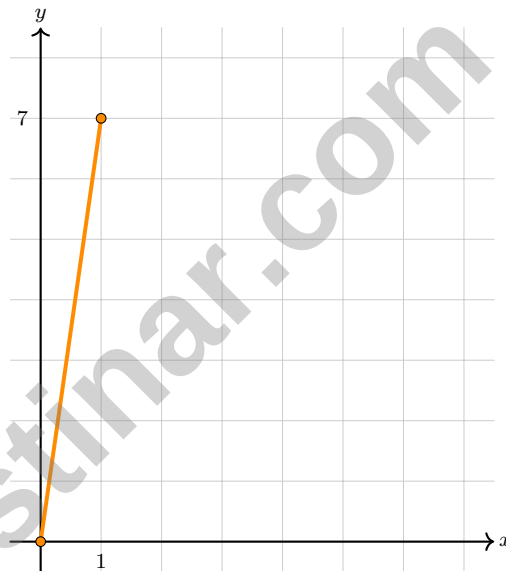
☐ A. n^1

☐ C. n^{-5}

☐ B. n^{13}

☐ D. n^5

3)



Equation of the line?

☐ A. $y = \frac{1}{7}x$

☐ C. $y = 7x$

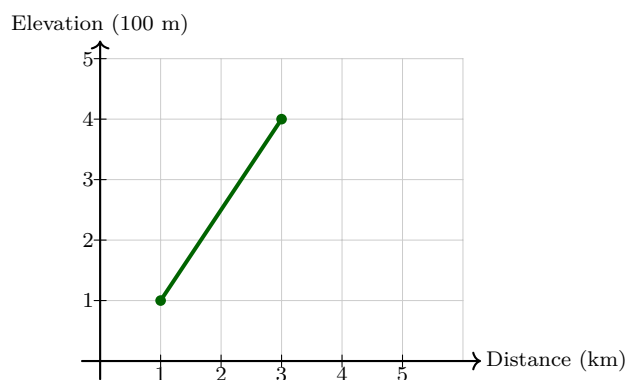
☐ B. $y = x + 7$

☐ D. $y = 7 + x$



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- 4) The graph shows elevation change during a hike.



What is the slope of the line?

- ☐ A. $\frac{3}{4}$ ☐ C. $\frac{3}{2}$
☐ B. $\frac{2}{3}$ ☐ D. 2
- 5) A 300 mL mixture contains 40% juice and 60% water. How much pure juice must be added to make the mixture 60% juice?
- ☐ A. 75 mL ☐ C. 150 mL
☐ B. 100 mL ☐ D. 200 mL
- 6) If $h(x) = -x + 4$, what is $h(1)$?
- ☐ A. 3 ☐ C. -3
☐ B. 5 ☐ D. 4



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.** **8.5(C)** Marginal relative frequency for sports: $\frac{220}{400} = 0.55$. This is the column-total ratio.
- 2) **Choice A is correct.** **8.7(A)** Let a = adult tickets and s = student tickets. Then $a + s = 120$ and $15a + 8s = 1520$. Substitute $a = 120 - s$: $15(120 - s) + 8s = 1520$, so $1800 - 7s = 1520$. Then $7s = 280$, so $s = 40$.
- 3) **Choice A is correct.** **8.10(C)** Checking: $(1, 2) \rightarrow (-1, -2)$, $(3, 2) \rightarrow (-3, -2)$, $(2, 4) \rightarrow (-2, -4)$. All points follow the rule $(x, y) \rightarrow (-x, -y)$, confirming 180° rotation.
- 4) **The correct answer is $\frac{3}{2}$.** **8.4(B)** Three points: $(0, 0)$, $(2, 3)$, $(4, 6)$. Slope = $\frac{3}{2} = 1.5$.
- 5) **Choice B is correct.** **8.8(D)** The exterior angle at B is supplementary to the interior angle B : exterior angle = $180 - 70 = 110^\circ$. Alternatively, exterior angle = $\angle A + \angle C = 55 + 55 = 110^\circ$.
- 6) **Choice D is correct.** **8.5(D)** Substituting $x = 4$: $y = 0.5(4) + 10 = 2 + 10 = 12$. Point $(4, 12)$ is on the line.
- 7) **Choice B is correct.** **8.3(A)** Scale factor is $\frac{15}{10} = 1.5$. Shorter base is $6 \times 1.5 = 9$ cm.
- 8) **Choice C is correct.** **8.5(G)** Substitute $t = 3$: $d(3) = 55(3) = 165$ miles.
- 9) **Choice D is correct.** **8.2(A)** $\frac{5}{8} = 0.625$, a terminating decimal. This is rational. The others are irrational: $\sqrt{5}$ is a non-perfect-square root, $\sqrt{e}$ is irrational, and $1 + \pi$ is an irrational sum.
- 10) **Choice D is correct.** **8.2(B)** Let $x = 0.3\overline{2} = 0.3222\dots$. Then $10x = 3.\overline{2}$ and $100x = 32.\overline{2}$. Subtracting: $90x = 29$, so $x = \frac{29}{90}$.
- 11) **Choice D is correct.** **8.2(B)** $\frac{7}{2} = 3.5$, 0.25 , and 3 are all rational. Only $\sqrt{5}$ is irrational.
- 12) **Choice D is correct.** **8.2(D)** $\frac{\pi}{2} \approx \frac{3.14}{2} = 1.57$.
- 13) **Choice D is correct.** **8.2(C)** A negative exponent moves the decimal left. $4.25 \times 10^{-1} = 0.425$.
- 14) **Choice A is correct.** **8.7(B)** Lateral surface area requires the slant height (from apex to midpoint of base edge), not the altitude (perpendicular distance from apex to base center). The altitude is 8 cm, but the slant height is $\sqrt{8^2 + 5^2} = \sqrt{89} \approx 9.4$ cm. Using altitude is a common error.
- 15) **Choice A is correct.** **8.10(A)** 270° counterclockwise equals 90° clockwise, using the rule $(x, y) \rightarrow (y, -x)$. Distractor B is 90° counterclockwise.
- 16) **Choice A is correct.** **8.5(B)** Using $(1, 4)$ and $(5, 2)$: slope = $\frac{2-4}{5-1} = -\frac{1}{2}$. Substituting: $4 = -\frac{1}{2}(1) + b$ gives $b = \frac{9}{2}$.
- 17) **Choice C is correct.** **8.8(A)** The left side equals the right side for all values of x . This is an identity.
- 18) **The correct answer is 2.** **8.4(C)** Slope = $\frac{10-2}{4-0} = \frac{8}{4} = 2$.
- 19) **The correct answer is A,E.** **8.2(A)** A is true because $(m^5)^2 = m^{10}$. E is true because $(m^2)^5 = m^{10}$. B simplifies to m^9 , C is a sum, and D simplifies to m^8 .
- 20) **Choice C is correct.** **8.8(A)** When dividing (or multiplying) both sides of an inequality by a negative number, the inequality symbol must flip to preserve the truth of the statement. For example, if $2 > 1$ (true), multiplying by -1 gives $-2 > -1$ (false), so we flip to get $-2 < -1$ (true).
- 21) **Choice B is correct.** **8.6(A)** Sphere: $V = \frac{4}{3} \times 3.14 \times 8 = 33.49 \text{ cm}^3$. Cylinder: $V = 3.14 \times 4 \times 8 = 100.48 \text{ cm}^3$. Cylinder is larger.
- 22) **The correct answer is 0.7.** **8.12(D)** Total: 10 marbles. Not blue: $5 + 2 = 7$. $P(\text{not blue}) = \frac{7}{10} = 0.7$.
- 23) **Choice C is correct.** **8.5(D)** Set $y = 0$: $0 = -0.5x + 5 \Rightarrow 0.5x = 5 \Rightarrow x = 10$.
- 24) **Choice C is correct.** **8.12(A)** Interest: $I = 15000 \times 0.07 \times 5 = \$5,250$.
- 25) **Choice C is correct.** **8.2(B)** Area of a square = $s^2 = 9^2 = 81 \text{ cm}^2$.
- 26) **Choice C is correct.** **8.2(C)** $3.2 \times 10^{-3} = 3.2 \div 1,000 = 0.0032$. Moving the decimal 3 places left.



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A Note for a Careful Thinker

Hi, Careful Thinker!

◇ This carefully paced book gave you four steady Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. This book gave you room to practice the kind of thinking eighth graders need: modeling linear relationships, solving systems, connecting algebra and geometry, and interpreting data. ◇

★ **Remember this:** The goal was never just to finish pages. The goal was to become the kind of student who knows how to begin, how to adjust, and how to check. ★

Your Careful-Thinking Toolkit

- **Read Twice:** First for the story, second for the math.
- **Label Values:** Give each number a job.
- **Check Signs:** Negatives and inequalities deserve attention.
- **Use Evidence:** Let the work prove the answer.

Grade 8 test-day tip: On test day, underline the question before solving. It keeps your answer aimed at the right target.

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

Jay Daie

Your Math Practice Coach

PRACTICE TODAY, ACHIEVE TOMORROW!

Give your child the confidence and skills they need with **4 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!

4



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!



4 PRINTED TESTS



2 ONLINE TESTS



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