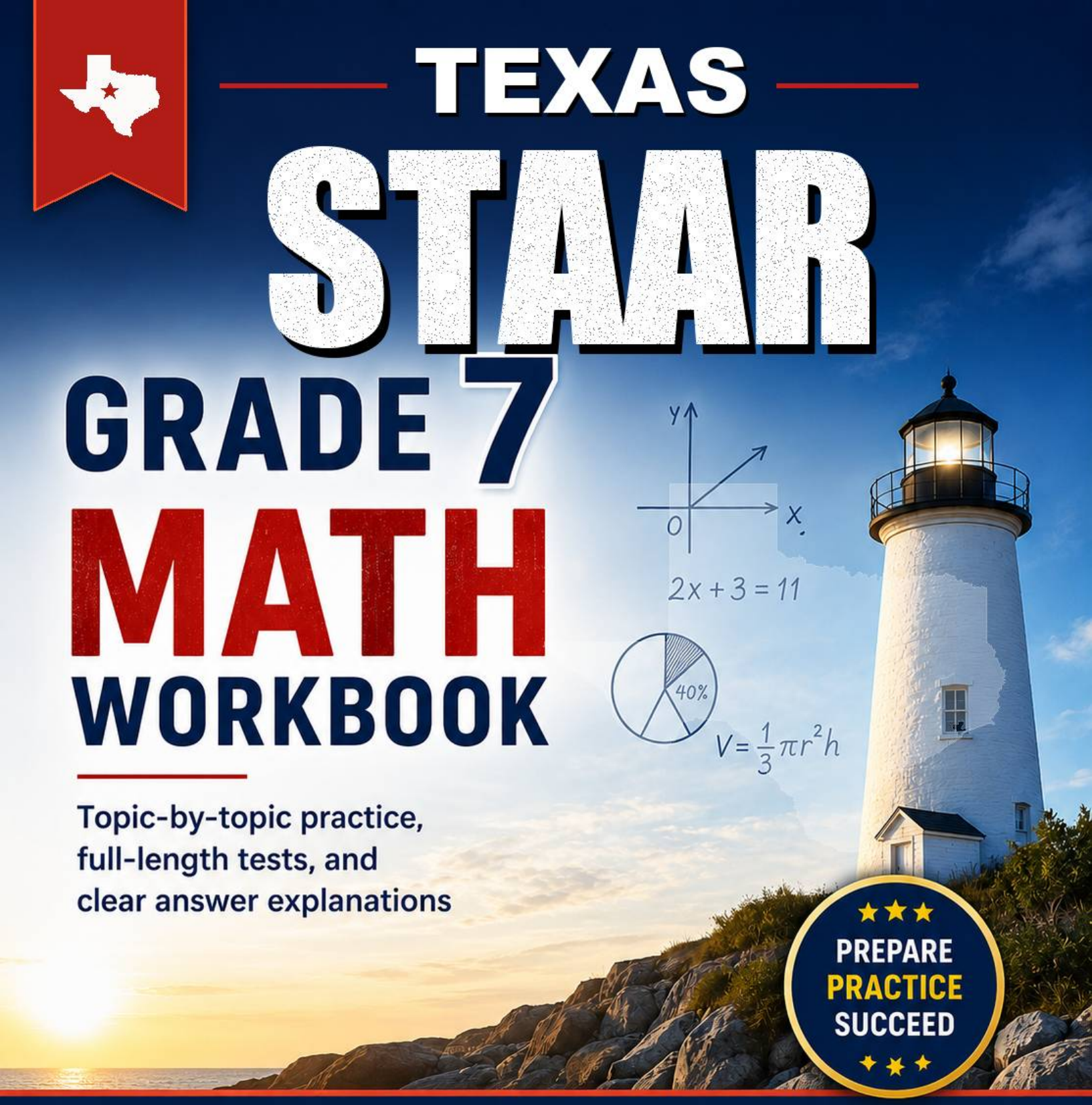
TEXAS STAAR GRADE 7 MATH WORKBOOK



Topic-by-topic practice, full-length tests, and clear answer explanations

PREPARE PRACTICE SUCCEED

TOPIC-BY-TOPIC PRACTICE
Build skills and strengthen concepts

FULL-LENGTH TESTS
Realistic practice to build confidence

CLEAR ANSWER EXPLANATIONS
Understand every step and improve

State of Texas Assessments of Academic Readiness

Texas STAAR

Grade 7

Math Workbook

Topic-by-topic practice, full-length tests, and clear answer explanations

7

Built for steady Grade 7 progress

Integers, ratios, percents, expressions, geometry, statistics, and probability

73 Topic Worksheets

2 Full-Length Tests

Answer Explanations



Reza Nazari

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7.6(E)	find the probabilities of a simple event and its complement and describe the relationship between the two
7.6(F)	use data from a random sample to make inferences about a population
7.6(G)	solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents
7.6(H)	solve problems using qualitative and quantitative predictions and comparisons from simple experiments;
7.6(I)	determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces
7.7	The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form y = mx + b

7.8 | The student applies mathematical process standards to develop geometric relationships. . .

The student applies mathematical process standards to develop geometric relationships with volume

7.8(A)	model the relationship between the volume of a rectangular prism and a rectangular pyramid having both congruent bases and heights and connect that relationship to the formulas
7.8(B)	explain verbally and symbolically the relationship between the volume of a triangular prism and a triangular pyramid having both congruent bases and heights and connect that relationship to the formulas;
7.8(C)	use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas

7.9 | The student applies mathematical process standards to solve geometric problems

The student applies mathematical process standards to solve geometric problems

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7.9(A)	solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids
7.9(B)	determine the circumference and area of circles
7.9(C)	determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles;
7.9(D)	solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net

7.10 | The student applies mathematical process standards to use one-variable equations and. . .

The student applies mathematical process standards to use one-variable equations and inequalities to represent situations

7.10(A)	write one-variable, two-step equations and inequalities to represent constraints or conditions within problems
7.10(B)	represent solutions for one-variable, two-step equations and inequalities on number lines;
7.10(C)	write a corresponding real-world problem given a one-variable, two-step equation or inequality

7.11 | The student applies mathematical process standards to solve one-variable equations and. . .

The student applies mathematical process standards to solve one-variable equations and inequalities

7.11(A)	model and solve one-variable, two-step equations and inequalities

7.11(B) determine if the given value(s) make(s) one-variable, two-step equations and inequalities true;

7.11(C) write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships

7.12 | Measurement and data

Use measurement and data analysis to solve real-world problems

7.12(A) compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads

7.12(B) use data from a random sample to make inferences about a population;

7.12(C) compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations

7.13 | Personal financial literacy

Apply mathematical concepts to personal financial decision-making

7.13(A) calculate the sales tax for a given purchase and calculate income tax for earned wages

7.13(B) identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget

7.13(C) create and organize a financial assets and liabilities record and construct a net worth statement

7.13(D) use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby

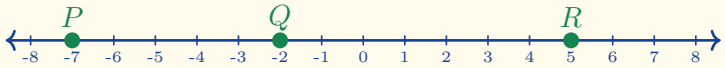
7.13(E) calculate and compare simple interest and compound interest earnings;

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determine which submarine is *closer* to the surface, and by exactly how many feet closer it is than the other submarine.

17. Alena's bank account balance was \$0 on Sunday. By Monday evening her balance had dropped to −\$47. By Tuesday evening it had dropped further to −\$62. Use absolute value to state her Tuesday balance as a positive amount owed. Then determine by how many dollars her balance changed between Monday evening and Tuesday evening, and express that change as an absolute value.

18. Three points P, Q, R are marked on the number line shown here. Find $|P|$, $|Q|$, and $|R|$. Then determine which point is farthest from zero, and compute $|P| + |R|$ (the total distance from zero of the two outer points).



1.3 Comparing and Ordering Integers

7.3(B)

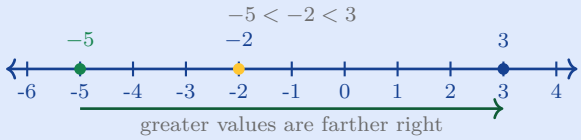
The trick to comparing integers is to picture them on a number line. Numbers get larger as you move to the **right** and smaller as you move to the **left**. This is especially handy with negatives—for example, -3 is greater than -8 because -3 is closer to zero (farther right on the line). When a problem asks you to order integers from least to greatest, you are simply listing them in the same left-to-right order they appear on the number line. Once you have this picture in your head, symbols like $<$, $>$, and $=$ become second nature.

Key Concepts & Quick Review

Comparing: $a > b$ means a is to the **right** of b on the number line. $a < b$ means a is to the **left** of b.

Negatives rule: Among two negative integers, the one **closer to zero** is **greater**.
Ordering: list integers from least (leftmost) to greatest (rightmost).

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Examples

① Compare -7 and -3. Write $<$, $>$, or $=$.

Think It Through: Put both numbers on a number line in your mind. The number -3 is closer to zero, so it sits to the right of -7. Numbers to the right are greater, and numbers to the left are smaller. Therefore $-7 < -3$.

Answer: $-7 < -3$

② Order from **least to greatest**: $4,\ -9,\ 2,\ -1,\ -6$.

Think It Through: Imagine placing all five integers on a number line. The farthest left is -9, then comes -6, then -1. After the negatives come the positives: 2 and then 4. Reading from left to right gives the order from least to greatest.

Answer: $-9 < -6 < -1 < 2 < 4$

Practice Problems

Write $<$, $>$, or $=$ in each box to make the statement true.

1. $-5 \square -2$ _____
2. $-8 \square -11$ _____
3. $7 \square -7$ _____
4. $-4 \square 0$ _____
5. $-15 \square -15$ _____
6. $-1 \square -100$ _____
7. $-9 \square 3$ _____
8. $|-6| \square 6$ _____
9. $-|-4| \square -4$ _____
10. $|-10| \square |-12|$ _____
11. $-20 \square -19$ _____
12. $0 \square -1$ _____
13. $-(-3) \square -3$ _____
14. $-|7| \square -7$ _____
15. $-25 \square -52$ _____

Study Tips

- Among two negative integers, the one with the **smaller absolute value** is **greater**: $-3 > -10$ because $3 < 10$.
- Any positive integer is always greater than any negative integer: $1 > -1{,}000{,}000$.
- When ordering a mixed set, negatives always come before zero, and zero comes before all positives.

Word Problems

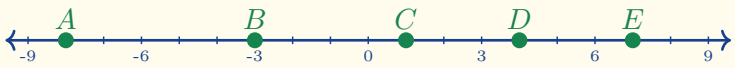
16. Five students competed in a math quiz bowl where correct answers earn points and incorrect answers lose points. Their final net scores were: -16, 8, -4, -21, and 5. Order the scores from *lowest to highest* and identify the student with the best score and the student with the worst score. Then find the range of scores (highest minus lowest).

_____

17. Four ocean animals are recorded at the following depths below the surface: a shark at -85 feet, a jellyfish at -12 feet, a sperm whale at -210 feet, and a yellowfin tuna at -47 feet. Order the animals from *shallowest* to *deepest* depth. How much deeper is the sperm whale than the shark?

_____

18. Five points are plotted on the number line shown here. Identify the integer at each point, then list the points in order from least to greatest. Which point has the greatest absolute value?



_____