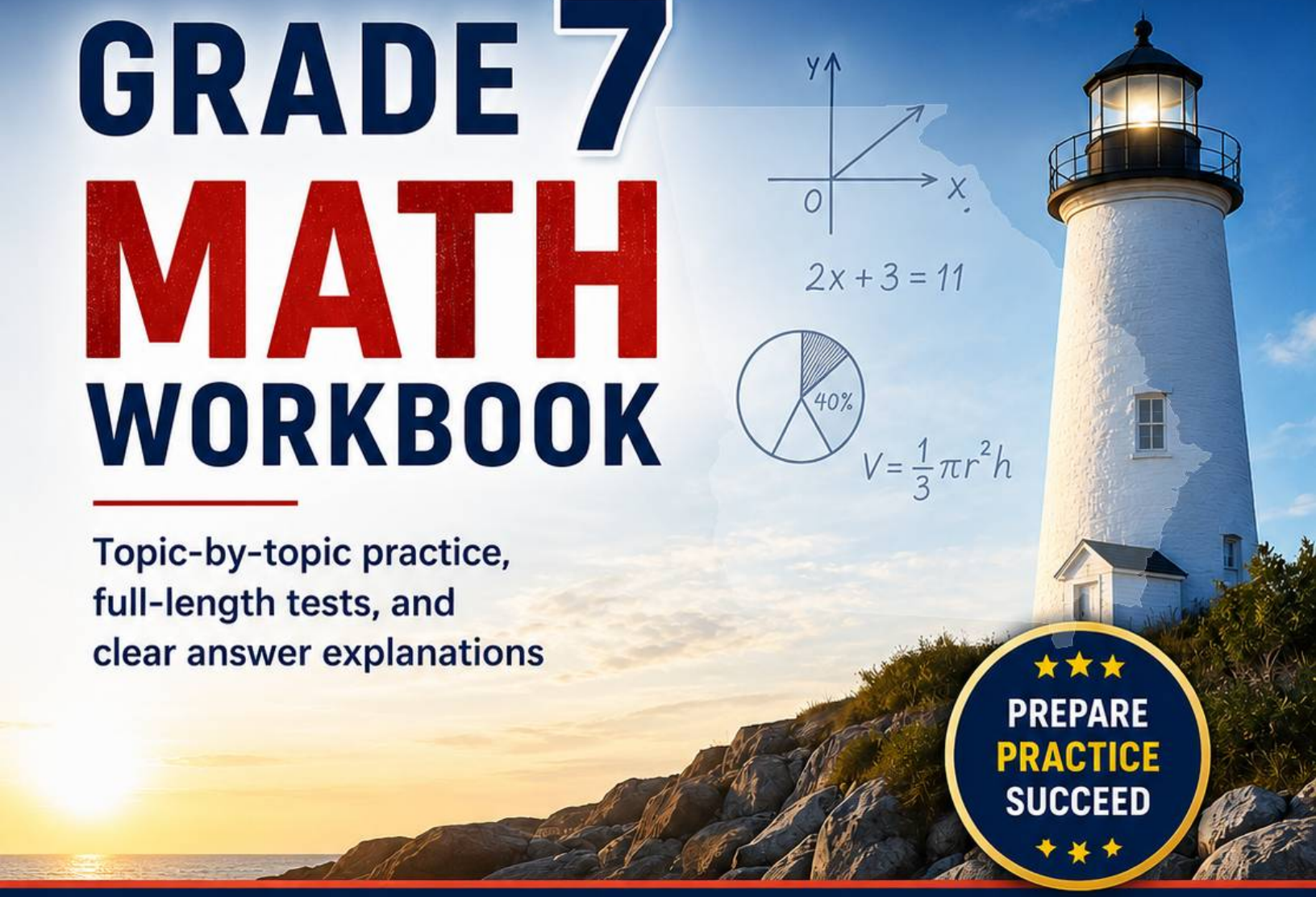
GEORGIA MILESTONES

GRADE 7 MATH WORKBOOK

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



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

Georgia Milestones

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

76 Topic Worksheets

2 Full-Length Tests

Answer Explanations



Reza Nazari

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7.PAR.4.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units presented in realistic problems
7.PAR.4.2	Determine the unit rate (constant of proportionality) in tables, graphs (1,r), equations, diagrams, and verbal descriptions of proportional relationships to solve realistic problems
7.PAR.4.3	Determine whether two quantities presented in authentic problems are in a proportional relationship
7.PAR.4.4	Identify, represent, and use proportional relationships
7.PAR.4.5	Use context to explain what a point (x,y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1,r) whereris the unit rate
7.PAR.4.6	Solve everyday problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale
7.PAR.4.7	Use similar triangles to explain why the slope,m, is the same between any two distinct points on a nonvertical line in the coordinate plane
7.PAR.4.8	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways
7.PAR.4.9	Use proportional relationships to solve multi-step ratio and percent problems presented in applicable situations
7.PAR.4.10	Predict characteristics of a population by examining the characteristics of a representative sample. Recognize the potential limitations and scope of the sample to the population
7.PAR.4.11	Analyze sampling methods and conclude that random sampling produces and supports valid inferences
7.PAR.4.12	Use data from repeated random samples to evaluate how much a sample mean is expected to vary from a population mean. Simulate multiple samples of the same size

7.PR | Georgia

Grade 7 expectations grouped under 7.PR.



7.PR.6	Using mathematical reasoning, investigate chance processes and develop, evaluate, and use probability models to find probabilities of simple events presented in authentic situations
7.PR.6.1	Represent the probability of a chance event as a number between 0 and 1 that expresses the likelihood of the event occurring. Describe that a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event
7.PR.6.2	Approximate the probability of a chance event by collecting data on an event and observing its long-run relative frequency will approach the theoretical probability
7.PR.6.3	Develop a probability model and use it to find probabilities of simple events. Compare experimental and theoretical probabilities of events. If the probabilities are not close, explain possible sources of the discrepancy
7.PR.6.4	Develop a uniform probability model by assigning equal probability to all outcomes and use the model to determine probabilities of events
7.PR.6.5	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process
7.PR.6.6	Use appropriate graphical displays and numerical summaries from data distributions with categorical or quantitative (numerical) variables as probability models to draw informal inferences about two samples or populations

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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

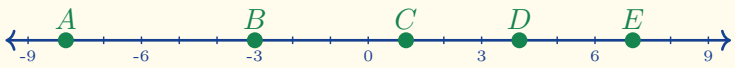
16. Five students competed in a math quiz bowl where correct answers earn points and incorrect answers lose points. Their final net scores were: -16, 8, -4, -21, and 5. Order the scores from *lowest to highest* and identify the student with the best score and the student with the worst score. Then find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



_____

1.4 Adding Integers

7.NR.1.3

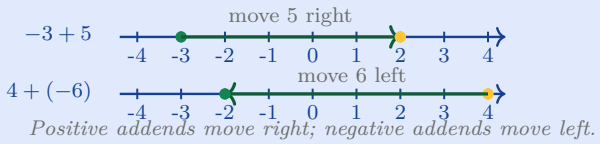
Think of adding integers as combining movements on a number line—or combining gains and losses in everyday life. Here is the key: when both numbers share the same sign, they move in the same direction, so you add the absolute values and keep that sign. When the signs are different, the numbers pull in opposite directions; you subtract the smaller absolute value from the larger one and keep the sign of whichever was stronger. You will also meet **zero pairs** (additive inverses), which show why a positive and its matching negative cancel out completely. Master these two rules and integer addition will feel natural every time.

Key Concepts & Quick Review

Same signs: Add the absolute values; keep the common sign. **Example:** $(-5)+(-8)=-(5+8)=-13$

Different signs: Subtract the smaller $|\cdot|$ from the larger; keep the sign of the larger $|\cdot|$.
Example: $(-9)+4=-(9-4)=-5$

Additive inverse: $a+(-a)=0$ **Identity:** $a+0=a$



Positive addends move right; negative addends move left.

Examples

① Evaluate $(-13)+7$.

Think It Through: The signs are different, so subtract the smaller absolute value from the larger one. That gives $13-7=6$. Now decide the sign by looking at which number has the larger absolute value. Since 13 is larger than 7, the negative number wins. So the sum is -6.

Answer: -6

② A hiker starts at 240 feet above sea level, descends 380 feet, then climbs back up 95 feet. What is the hiker's final elevation?

Think It Through: Translate the changes into integers: $240+(-380)+95$. First combine 240 and -380. Because the signs are different, subtract $380-240=140$ and keep

the sign of the larger absolute value, which is negative, so the result is -140. Then add 95: $-140 + 95 = -45$. The final elevation is -45 feet, which means 45 feet below sea level.

Answer: -45 *feet*

Practice Problems

Find each sum.

1. $5 + (-8) =$ _____

2. $(-6) + (-9) =$ _____

3. $(-12) + 7 =$ _____

4. $(-3) + 15 =$ _____

5. $(-14) + (-6) =$ _____

6. $8 + (-8) =$ _____

7. $(-25) + 13 =$ _____

8. $(-9) + (-11) =$ _____

9. $17 + (-24) =$ _____

10. $(-30) + 45 =$ _____

11. $(-7) + (-7) + 4 =$ _____

12. $12 + (-5) + (-9) =$ _____

13. $(-20) + (-15) + 30 =$ _____

14. $(-6) + 13 + (-4) =$ _____

15. $36 + (-49) =$ _____

Study Tips

- When adding a long list of integers, group positives together and negatives together first; then combine the two totals.
- Opposite integers cancel: $(-7) + 7 = 0$. Look for zero pairs to simplify quickly.
- The sign of the answer matches the sign of the integer with the **larger** absolute value.

Word Problems

16. During a single football drive, a team gains 14 yards on the first play, loses 19 yards on the second play, gains 8 yards on the third play, and loses 6 yards on the fourth play. Write an addition expression using integers to represent the total yardage change, and then find the result. Is the team ahead of or behind their starting position, and by how many yards?

_____

17. Kenji starts the week with \$15 in his account. He deposits \$30 on Monday, withdraws \$48 on Tuesday, deposits \$12 on Wednesday, and withdraws \$22 on Thursday. Write his balance after each transaction as an addition expression, and determine whether his

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