SOUTH CAROLINA

SC READY

7th GRADE MATH

MADE RIDICULOUSLY SIMPLE

A Comprehensive 7th Grade Math Study Guide to Acing the SC READY Test

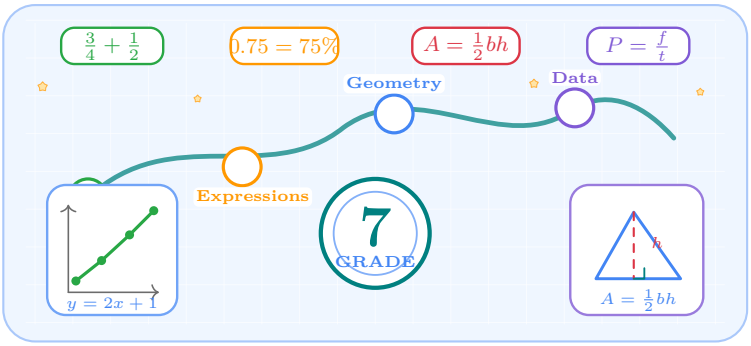
- COVERS ALL 7TH GRADE MATH STANDARDS
- EASY-TO-UNDERSTAND LESSONS & EXAMPLES
- PRACTICE QUESTIONS WITH DETAILED EXPLANATIONS
- TEST-TAKING STRATEGIES & TIPS
- BUILD CONFIDENCE. IMPROVE SCORES. SUCCEED!

LEARN SMART. PRACTICE MORE. ACE THE SC READY!

South Carolina SC READY

7th Grade Math Made Ridiculously Simple

A Comprehensive 7th Grade Math Study Guide to Acing the SC READY Test



Reza Nazari

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7.DPSR.2.4	Compare and contrast the experimental and theoretical probabilities for a simple experiment

7.MGSR | South Carolina

Grade 7 expectations grouped under 7.MGSR.

7.MGSR.1	Determine the measurements of geometric figures
7.MGSR.1.1	Identify the parts of a circle. Limit the parts tocenter,radius,diameter, andchord
7.MGSR.1.2	Describe the relationship between theradius,diameter, andcircumferenceof a circle
7.MGSR.1.3	Solve mathematical and real-world situations involving circumference or area of circles
7.MGSR.1.4	Determine if three given side lengths can form a triangle using theTriangle Inequality Theorem
7.MGSR.1.5	In mathematical and real-world situations, find the volume of right prisms and right pyramids having triangular or quadrilateral bases
7.MGSR.1.6	In mathematical and real-world situations, find the surface area of right prisms and right pyramids having triangular or quadrilateral bases
7.MGSR.2	Determine angle and/or side relationships
7.MGSR.2.1	Determine the measure of the third angle given the measure of the other two angles of a triangle using theTriangle Sum Theorem
7.MGSR.2.2	Solve mathematical and real-world situations involving dimensions and areas of geometric figures including scale drawings and scale factors
7.MGSR.2.3	Identify the relationships and measures among angles formed by two intersecting lines, given the measure of one angle. Limit to supplementary, complementary, vertical, and adjacent relationships
7.MGSR.2.4	Write and solve equations to solve mathematical and real-world situations involving the relationships among angles formed by two intersecting lines. Limit to supplementary, complementary, vertical, and adjacent relationships
7.MGSR.3	Graph on the coordinate plane
7.MGSR.3.1	Find distances between ordered pairs on the coordinate plane, limited to the samex-coordinate or the samey-coordinate

7.NR | South Carolina

Grade 7 expectations grouped under 7.NR.

7.NR.1	Translate among multiple representations of rational numbers
7.NR.1.1	Convert rational numbers into equivalent forms among fractions (including mixed numbers), decimals, and percentages. Exclude the conversion of repeating decimals to fractions
7.NR.2	Utilize rational numbers in mathematical and real-world situations
7.NR.2.1	Compare two rational numbers and write statements usingis equal to(=),is not equal to($\neq$),is less than($<$),is greater than($>$),is greater than or equal to($\geq$), and/oris less than or equal to($\leq$) in mathematical and real-world situations

7.PAFR | South Carolina

Grade 7 expectations grouped under 7.PAFR.

7.PAFR.1	Use tables, graphs, verbal descriptions, or equations to represent a function
7.PAFR.1.1	Apply proportional reasoning to solve problems in mathematical and real-world situations involving ratios and percentages
7.PAFR.1.2	Create a model with functions that address a proportional relationship in real-world situations
7.PAFR.1.3	Identify the constant of proportionality within proportional relationships
7.PAFR.2	Write, simplify, and evaluate algebraic expressions; write and solve algebraic equations and inequalities
7.PAFR.2.1	Write and solve multi-step equations and inequalities in one variable involving rational numbers in mathematical and real-world situations
7.PAFR.2.2	Write and evaluate expressions in one variable that model mathematical and real-world situations
7.PAFR.2.3	Compute unit rates, including those involving complex fractions with like or different units
7.PAFR.2.4	Use dimensional analysis to convert units between metric and customary systems

7.PAFR.3	Apply mathematical patterns, properties, and algorithms to the set of rational numbers to find sums, differences, products, and quotients and to write equivalent expressions
7.PAFR.3.1	Simplify numerical expressions that include integer exponents using the laws of exponents: theProduct of Powers, Quotient of Powers, Power of a Power, Power of a Product, Power of a Quotient, Zero Power, and Negative Exponent
7.PAFR.3.2	Identify linear expressions that are equivalent
7.PAFR.3.3	Recognize that algebraic expressions may have a variety of equivalent forms and determine an appropriate form for a given real-world situation
7.PAFR.3.4	Factor linear expressions with integer coefficients using the greatest common factor (GCF)
7.PAFR.3.5	Apply all operations with rational numbers to solve problems in mathematical and real-world situations

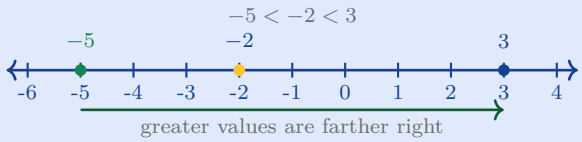
1.3 Comparing and Ordering Integers 7.NR.1.1

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).



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

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✎ 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

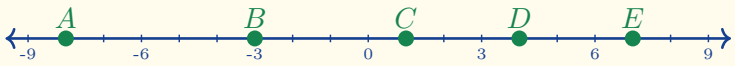
16. Five students competed in a math quiz bowl where correct answers earn points and incorrect answers lose points. Their final net scores were: -16, 8, -4, -21, and 5. Order the scores from *lowest to highest* and identify the student with the best score and the student with the worst score. Then find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



_____

1.4 Adding Integers

7.NR.1.1

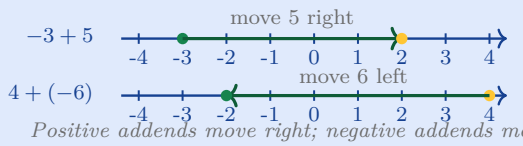
Think of adding integers as combining movements on a number line—or combining gains and losses in everyday life. Here is the key: when both numbers share the same sign, they move in the same direction, so you add the absolute values and keep that sign. When the signs are different, the numbers pull in 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.

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