y = mx + b

x^2 + 5x + 6 = 0

MISSOURI MAP

sqrt(x)



7th GRADE MATH MADE RIDICULOUSLY SIMPLE

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

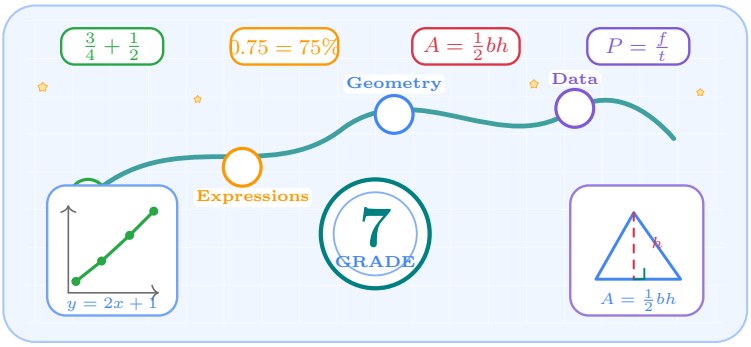
- COVERS ALL 7TH GRADE MATH STANDARDS
- EASY-TO-UNDERSTAND LESSONS & EXAMPLES
- PRACTICE QUESTIONS WITH DETAILED EXPLANATIONS
- TEST-TAKING STRATEGIES & TIPS
- BUILD CONFIDENCE. IMPROVE SCORES. SUCCEED!

LEARN SMART. PRACTICE MORE. ACE THE MAP!

Missouri MAP

7th Grade Math Made Ridiculously Simple

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



Reza Nazari

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7.DSP.C.8	Find probabilities of compound events using organized lists, tables, tree diagrams and simulations

7.EEI | Expressions, Equations and Inequalities

Generate equivalent expressions and solve equations and inequalities

7.EEI.A	Use properties of operations to generate equivalent expressions
7.EEI.A.1	Apply properties of operations to simplify and to factor linear algebraic expressions with rational coefficients
7.EEI.A.2	Understand how to use equivalent expressions to clarify quantities in a problem
7.EEI.B	Solve problems using numerical and algebraic expressions and equations
7.EEI.B.3	Solve multi-step problems posed with rational numbers
7.EEI.B.4	Write and/or solve linear equations and inequalities in one variable

7.GM | Geometry and Measurement

Solve problems involving angle measure, area, surface area, and volume

7.GM.A	Draw and describe geometrical figures and describe the relationships between them
7.GM.A.1	Solve problems involving scale drawings of real objects and geometric figures, including computing actual lengths and areas from a scale drawing and reproducing the drawing at a different scale
7.GM.A.2	Use a variety of tools to construct geometric shapes
7.GM.A.3	Describe two-dimensional cross sections of pyramids, prisms, cones and cylinders
7.GM.A.4	Understand concepts of circles
7.GM.B	Apply and extend previous understanding of angle measure, area and volume
7.GM.B.5	Use angle properties to write and solve equations for an unknown angle
7.GM.B.6	Understand the relationship between area, surface area and volume

7.NS | Number Sense and Operations

Understand number properties and compute with rational numbers

7.NS.A	Apply and extend previous understandings of operations to add, subtract, multiply and divide rational numbers
7.NS.A.1	Apply and extend previous understandings of numbers to add and subtract rational numbers
7.NS.A.2	Apply and extend previous understandings of numbers to multiply and divide rational numbers
7.NS.A.3	Solve problems involving the four arithmetic operations with rational numbers

7.RP | Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve problems

7.RP.A	Analyze proportional relationships and use them to solve problems
7.RP.A.1	Compute unit rates, including those that involve complex fractions, with like or different units
7.RP.A.2	Recognize and represent proportional relationships between quantities
7.RP.A.3	Solve problems involving ratios, rates, percentages and proportional relationships

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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).

_____

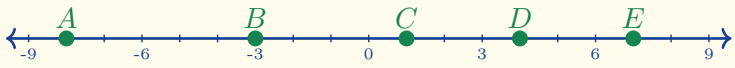
17. Four ocean animals are recorded at the following depths below the surface: a shark at -85 feet, a jellyfish at -12 feet, a sperm whale at -210 feet, and a yellowfin tuna at -47

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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.NS.A.1

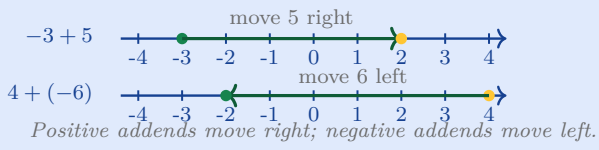
Think of adding integers as combining movements on a number line—or combining gains and losses in everyday life. Here is the key: when both numbers share the same sign, they move in the same direction, so you add the absolute values and keep that sign. When the signs are different, the numbers pull in 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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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. $36 + (-49) =$ _____

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