Beginning Algebra

Topic	Writing Prompt
Pre-Algebra Review	What is a numerator? What is a denominator? What do they tell us?
Pre-Algebra Review	Why do we need signed (positive and negative) numbers?
Pre-Algebra Review	Explain to a friend how exponential notation (exponents) is related to multiplication. (remember: you may use an example to help you explain, but you still need to explain in English sentences.)
Pre-Algebra Review	Define as many of the following vocabulary words from sections 1.1 and 1.2 as possible in the next 10 minutes: • constant • equation • evaluate • expression • factors • simplify • solve • terms • variable
Ration and Proportion	Explain to a friend how ratios and proportions are related, but why they are not the same.
Word Problems	State what happens in each of the following steps of the 5 steps for solving problems: 1. Familiarize 2. Translate 3. Solve 4. Check 5. State
Inequalities	Your friend is starting to work with inequalities and was given sets of 2 numbers and asked to insert <, >, ≤, ≥ to make true statements. Your friend wrote the following on their homework. 1. -7 > -2 2. 4 ≤ 4 Tell your friend whether these statements are true or false. Additionally, provide an explanation of how you made your decision.

Showing work	Pick **one** of the following problems that your friend did for homework. Explain to your friend what they can do to improve their mathematical notation. • Solve: • Simplify add: $3x + 2 = 14$ $5x - 3 + 6x - 10$ $\frac{2}{5} + \frac{3}{10}$ *I write examples of the type of work I've seen on student assignments.
Rates of change (Building up to slope in context)	Which of the following rates represent driving for 5 hours and going 250 miles? Explain your answers. a. $\dfrac{250\ miles}{5\ hours}$ b. $\dfrac{5\ hours}{250\ miles}$ c. $\dfrac{50\ miles}{1\ hour}$ d. 1 hour/ 50 miles
Equations of lines	Your friend missed the last few days of class. Help your friend to get caught up. Define intercepts and slope for your friend and tell them how to find these values on a graph.
Vocabulary (Emphasize meaning of solution before solving equations graphically.)	Explain to a friend what a mathematician means when they use the word SOLUTION.
Inequalities	Explain to your friend how to represent -1<x≤3 using a number line and interval notation.
Systems of equations	Explain to your friend what a system of equations is and what a solution is for a system of equations.
Systems of equations	If you are given the graph of y=5-3x and y=x+1, explain to a friend how to use that graph to solve the system made up of those 2 equations and also how to solve the equation 5-3x=x+1.
Graphing, Lines (used before solving systems of equations graphically)	Explain to a friend what does it means for a point to be on the graph of an equation.
Rules of Exponents	Explain why we subtract exponents when dividing exponential expressions with the same base.

Vocabulary (used before introducing polynomials)	You're helping your friend to do a math problems and the directions refer to "the opposite" of a number and combining "like terms." Define the following math vocabulary words to help your friend understand the directions. • Opposites • Like terms
Vocabulary (used before introducing polynomials)	You're helping your friend do math homework and the directions refer to "factors" and "terms." Define the following math vocabulary words to help your friend understand the directions. • Factor • terms
Polynomials	How do you determine the degree of a polynomial?
Relating mathematical concepts (used before introducing polynomial division)	Explain to your friend the following: *How multiplication and division are related. *How fractions and division are related.
Factoring and Solving Polynomial equations	Your friend missed class on Tuesday. Please explain to your friend how to use the zero product principle to solve an equation.
Polynomials & Solving graphically	What are the zeros of a function? How are they related to the solutions of f(x) = 0?