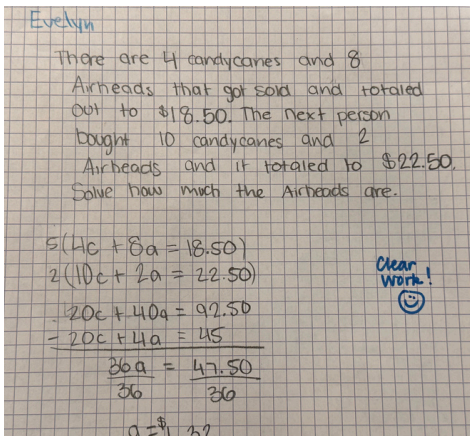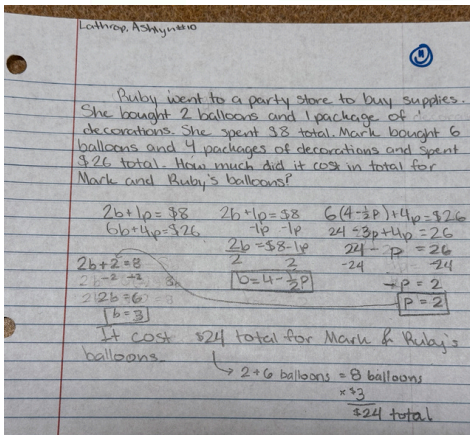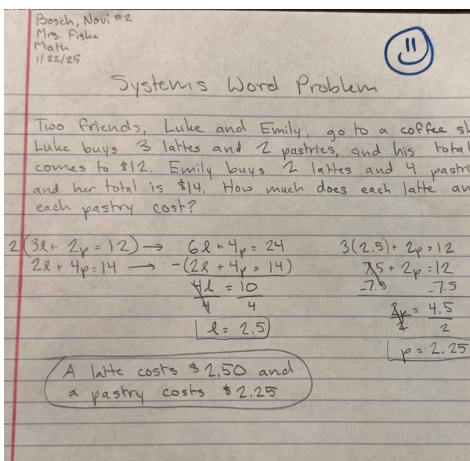# EXPLORING SYSTEMS OF EQUATIONS AND INEQUALITIES

in Algebra 1

This month in Algebra 1, students have been diving into systems of equations and systems of inequalities. These topics challenge students to think critically about how different mathematical relationships intersect and interact. By analyzing multiple equations or inequalities simultaneously, students develop a deeper understanding of how to solve real-world problems where several conditions must be met at the same time, such as finding the optimal solution for a business problem.

EXPLORING SYSTEMS OF EQUATIONS AND INEQUALITIES

in Algebra 1

In class, students began by learning how to solve systems of equations using methods such as graphing, substitution, and elimination. They worked on activities that emphasized not only solving systems but also interpreting the solutions in meaningful ways. Students were challenged to write their own system of equations word problems to demonstrate their understanding of real-life scenarios in which a system of equations can be a useful tool. Check out some of our student examples!

Bosch, Novi #2
Mrs. Fiske
Math
1/22/25

Systems Word Problem

Two friends, Luke and Emily, go to a coffee shop. Luke buys 3 lattes and 2 pastries, and his total comes to $12. Emily buys 2 lattes and 4 pastries, and her total is $14. How much does each latte and each pastry cost?

$$2(3\ell + 2p = 12) \rightarrow 6\ell + 4p = 24$$
$$2\ell + 4p = 14 \rightarrow -(2\ell + 4p = 14)$$
$$\frac{4\ell}{4} = \frac{10}{4}$$
$$\boxed{\ell = 2.5}$$

$$3(2.5) + 2p = 12$$
$$7.5 + 2p = 12$$
$$-7.5 \quad -7.5$$
$$\frac{2p}{2} = \frac{4.5}{2}$$
$$\boxed{p = 2.25}$$

A latte costs $2.50 and a pastry costs $2.25

In Evelyn's and Novi's examples, they each used the elimination method to find common coefficients so that terms could be subtracted.

Evelyn

There are 4 candycanes and 8 Airheads that got sold and totaled out to $18.50. The next person bought 10 candycanes and 2 Airheads and it totaled to $22.50. Solve how much the Airheads are.

$$5(4c + 8a = 18.50)$$
$$2(10c + 2a = 22.50)$$
$$20c + 40a = 92.50$$
$$-20c + 4a = 45$$
$$\frac{36a}{36} = \frac{47.50}{36}$$
$$a = \$1.32$$

Clear Work!

EXPLORING SYSTEMS OF EQUATIONS AND INEQUALITIES
in Algebra 1

In Ashlyn's example, she used substitution to isolate one variable. She substituted that value into the other equation in order to calculate the cost of balloons and decorations.