

Solving Systems of Linear Equations

Math 2, Unit 4

Anaheim Union High School District

Why are we studying this?

In this unit we will extend our knowledge about linear equations, slope and y-intercept to understand what a solution is for a system of linear equations. Using the idea of “solving” a system of equations we will be able to solve problems to determine which deal is better when buying hats, solving a crime, and even ridding a city of a ferocious dog-eating sewer gator!

Sample question we will be able to answer:



During a police chase, if a suspect is fleeing on a path of $y = -2x + 4$ and the police helicopter is flying on a path of $y = x + 1$, will the police helicopter ever see the suspect? If so, and the timing was right on, where would they intersect?

Real World Applications in this Unit

- Coin Problems
- Amusement Parks
- Police Chase!
- Determine Which Deal is Better and When (Break Even Point)



Math Topics Addressed in this Unit:

- What is a solution to a pair of simultaneous linear equations?
- How can I use the structure of an equation(s) to determine the number and/or type(s) of solution(s)?
- How is solving a pair of simultaneous equations similar or different from solving a linear equation?
- Can an equation, or a system of linear equations model this real-life scenario?

Dear Student & Parent/Guardian,

Solving systems of linear equations is an extension of prior topics: linear functions and bivariate data. In those units we we learned to graph and interpret linear equations and use them to model real-world phenomena.

In this unit, students will work with systems of linear equations in two variables in order to solve problems with two unknowns. As students work towards future math courses they will use this knowledge as a foundation to solve problems involving the complex number system as well as systems with three or more unknowns.

-AUHSD Math Teachers

A Note About Homework:

Homework in this unit will focus on concepts learned prior units, necessary for success in Math Two, as well as current topics of writing equations and extending patterns to systems of linear equations.

Henry lost his cell phone and his mom is making him pay for his new phone and phone plan. (This is the 3rd phone Henry has lost!! and his phone plan has expired.) Henry has decided on the free phone, but the cell phone provider has three different monthly plans to choose from. The plans are:

- Plan A: \$15.00 for unlimited calls plus \$0.10 per text
- Plan B: \$6.00 for unlimited calls \$0.20 per text
- Plan C: \$30 flat rate, unlimited calls, unlimited texting (coverage is limited)



If Henry makes about 35 calls a month, and 150 texts, which plan should he choose and why?