

Algebra 2
Unit: Systems of Equations and Inequalities
Section: Systems of Equations

Example: Inconsistent Systems

Screen 1

Solve the following system of equations using elimination. Five x minus eight equals three y.
Ten x minus six y equals eighteen.

To begin with, we must rewrite the first equation so that it is in the correct form. Add the eight so that it is on the right side and subtract the three y so that it is on the left side. This gives us these two equations. Five x minus three y equals eight. Ten x minus six y equals eighteen.

Multiply the first equation by negative two and we will have equations with opposite y-coefficients. Negative ten x plus six y equals negative sixteen. Ten x minus six y equals eighteen. You might also notice that the coefficients of x are also opposite values. When we add them together, both the x and y terms will eliminate.

Zero x plus zero y equals two
Zero equals 2

Since this statement is not true, we can say that these equations are inconsistent. There are no solutions to this system of equations.