Name _____ Date _____

There's Another Way?

Using Linear Combinations to Solve a Linear System

1. The two high schools in the Jefferson Hills School District are named Jefferson Hills East and Jefferson Hills West. Both schools are taking field trips to the state capital. A total of 408 students from Jefferson Hills East will be going in 3 vans and 6 buses. A total of 516 students from Jefferson Hills West will be going in 6 vans and 7 buses. Each van has the same number of passengers and each bus has the same number of passengers.

   a. Write an equation in standard form that represents the students from Jefferson Hills East. Let x represent the number of students in each van, and let y represent the number of students in each bus.

   b. Write an equation in standard form that represents the students from Jefferson Hills West. Use the same variables as those used in part (a).

   c. How are the equations in parts (a) and (b) the same? How are they different?

   d. Describe the first step needed to solve the system using the linear combinations method. Identify the variable that will be eliminated as well as the variable that will be solved for when you add the equations.

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