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Solving some simultaneous equations

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1. In this quiz you'll be determined to practice solving linear simultaneous equations as a way to practice some basic linear algebra. Some of the ideas presented here will be relevant later in the course. **1 / 1 point** Try again

   Solving simultaneous equations is the process of finding the values of the variables (here x and y) that satisfy the system of equations. Let's start with the simplest type of simultaneous equation, where we already know all but one of the variables:

   $3x - y = 2$

   $x = 4$

   Substitute the value of x into the first equation to find y, then select the correct values of x and y below.

   - (●) $x = 4, y = 10$
   - ( ) $x = 4, y = -10$
   - ( ) $x = 4, y = 14$
   - ( ) $x = 4, y = 2$

   Correct
   When you know one of the variables, substituting it into one of the equations is a good way to find the other variable.

2. The first goal when solving simple simultaneous equations should be to isolate one of the variables. For example, try taking the second equation away from the first to solve the following pair of equations: **1 / 1 point**

   $3x - 2y = 7$

   $2x - 2y = 2$

   What value did you find for x? Now substitute x into one of the equations to find y, and select the correct pair below:

   - ( ) $x = 3, y = 1$
   - ( ) $x = 7, y = 7$
   - ( ) $x = 1, y = -4$
   - (●) $x = 5, y = 4$

   Correct
   Elimination can be a useful method to solve a simple system of linear equations.

3. This method is called elimination, and you can use it even when the coefficients, the numbers in front of x and y, aren't the same. **1 / 1 point**

   For example, to solve the following equations try multiplying both sides of the first equation by 2, then solve using the same method as the last question.

   $3x - 2y = 4$

   $6x + 3y = 15$

   Select the correct values of x and y below:

   - (●) $x = 2, y = 1$
   - ( ) $x = 4, y = -2$
   - ( ) $x = 1, y = 2$
   - ( ) $x = 3, y = 1$

   Correct
   We've seen that elimination can be a useful method to solve a simple system of linear equations.

4. A very similar technique can be used to find the inverse of a matrix, which you will learn about in week three of this course. **1 / 1 point**

   There is also the substitution method, where we rearrange one of the equations to the form $x = ay + b$ or $y = cx + d$ and then substitute x or y into the other equation. Use any method you'd like to solve the following simultaneous equations: