Relational algebra questions and solutions pdf

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Sure, you've made your moves on individual variable equations, and now they're not a problem, but what do you do when presented with multiple equations and multiple variables at once? These are what we call equation systems and fortunately for us, these are extremely predictable types of problems with multiple methods of solving them. Depending on how you like to work best, you can basically choose your own adventure when it comes to system problem equations. But before you choose a method that suits you (or individual problems) better, let's look at all the different options you have, as well as the types of questions you'll see come testing day. These questions will always appear once or twice on any test, so better understand all the strategies you have at your disposal. This will be your complete guide to the equation systems issues that they have, the many different ways to address them, and how you will see them on the SAT. What are equation systems? Equation systems are a set of two (or more) equations that have two (or more) variables. Equations rely on each other and can only be solved with the information everyone provides. Most of the time on the SAT, you'll see a system of equations that includes two equations and two variables, but it's certainly not unheard of that you'll see three equations and/or three variables, in any number of combinations. Equation systems can also be solved in many ways. As always with the SAT, how you decide to solve your problems basically depends on how you would like to work better, as well as the time you have to devote to this problem. Three ways to solve the problem of the equation system: #1: Chart No.2: Replacement No.3: Subtraction Let's look at each method and see them in action, using the same system of equations as an example. For our example, let's say that our system of equations: $2y and $3x $$y - 2x and $12 Method Solution 1: Graph Chart There will only ever be one solution to the system of equations, and that one solution will be crossing two lines. In order to chart our equations, we must first put each equation in tilt-intercept form. If you're familiar with the lines and slopes, you know that the tilt of the intercept form looks like this: $y and mx and b$ So let's put our two equations in slope-intercept form. $2y - 3x - $38 $2y - -3x - $38 $y y-3/2'x - $19 and $y - 2x - $12 $y - $2x and $12 Now let's chart each equation to find their crossing point. Once we chart our equation, we can see what the intersection is on (2, 16). So our final results: $x $2 and $y and $16 Method Solution 2: Replacing In order to solve our system of equations by replacing, we have to isolate one variable in one of the equations and then use that found for the second equation of the equation to address the remaining variable. For example, we have two equations, $2y and 3x and $38 $y - $2x and $12 so let's select just one of the equations and then isolate one of the variables. In this case, let's choose the second equation and isolate our y value. $y - $2x and $12 $y 2x and $12 next, we have to plug that found a variable in the second equation. (In this case, because we used the second equation to isolate our $y $, we need to plug that $y value in the first equation.) $2y - 3x - $38 $2 (2x - 12) - 3x - $38 $4x, 24 - 3x - $38 $24, 7x - $38$7x - $14 $x - $2 And finally, you can find a numerical value for your first variable (y) by connecting the numerical value for your second variable (x) in any equation. $2y - 3x - $38 $2y - 3(2) - $38 $2y, 6 - $38 $2y - $32 $y - $16 or $y - $22 $y - 2(2) - $12 $y - $4-12 $y - $16 In any case, you found value as your $x $ and $y $. Again, $x $2 and $y and $16 Method Solution 3: Subtraction As the last method to solve equation systems, you can subtract one of the variables completely to find the value of the second variable. We do this by subtracting one from the whole equation from another, complete, equation. Note that you can only do this if the variables in question (the one you want to eliminate) are exactly the same. If they are not the same, then we must first multiply the entire equation by the required amount to make them the same. In the case of our two equations, none of our variables is equal. $2y and 3x - $38 $y - $2x and $12 In this case, let's decide to subtract our values $y $ and cancel them. This means that we must first make them equal, multiplying our second equation by 2, so that both $y $ values are the same. $2y - 3x - $38 $y - 2x - $12 Becomes: $2y and 3x 38 $ (This first equation stays the same) And $2 (y - 2x 12)$ $'gt; $2y - $4x and $24 (the whole equation is multiplied by 2) And now we can undo our values in the y, subtracting all the second equation from the first. $2y - 3x - $38 - $2y - 4x - $24 ---------- $3x - -4x - $14 $14$14 $x and $2 Now that we've isolated our value x, we can connect it to one of our two equations to find our cost y. $2y - 3x - $38 $2y - 3 (2) - $38 $2y, 6 - $38 $2y, $32 $y - $16 Or $y - 2x - $12 $y - 2 (2) - $12 $y - $4 - $12 $y - $16 Our final results, once again, x2 and $$y$16. While there are many ways to solve your problems, don't let this knowledge overwhelm you; With practice, you will find the best solution method for you. No matter what method we use to solve our problems, the system of equations will have either one solution, meaning that each variable will have a numerical value attached-no solution, or endless solutions. In order for the system of equations to have solutions, each system is actually identical. That means they're same line. In order for the equation system to not have a solution, the values x will be equal when the values of $$y are set at $1 (which means that both variables - x and $$y - will be equal). The reason for this is that it will lead to two parallel lines, since the lines will have the same slope. The system has no solution because the two lines will never fit and therefore do not have a point of intersection. For example, since our system won't have a solution when our values $y $ and our values $x $equal, that means there will be no solution where we eliminated both of our variables by repealing them. In this case, subtraction would be the most appropriate solution to the problem. Why? We can see this because the two values $x $2x ($2x$ and $4x$) are multiples apart, so we can easily multiply one equation in order to equal them. $2x - 5y - $8 $4x - ky - $17 Now let's multiply the top equation to equalize our values in x. So system pair, $2 (2x - 5y - 8)$4x - ky - $17 Becomes, $4x - 10y - 16)$ - $4x - ky - $17 ---------- $-10y - ky -1$To have no solution, our two $y$values have to balance to zero. So let's set our two values $y $ equal to each other: $10y - ky K10y $$k - $10 Our cost $k $10 should be -10 in order for our system of equations not to have a solution. Our final answer: A, -10. Note: Don't fall in love with a bait response of 10 pounds! You're still subtracting your equation system, so watch out for the negatives. Also, if it upsets or confuses you to try to decide which of the three solutions best suits a particular problem, don't worry about it! You will almost always be able to solve your problem equation system no matter which method you choose. For example, you might as well choose a graph of this issue. If you did this, you would first have to put each equation in slope-intercept form: $2x - 5y and 8 $4x y ky 17 $2x - 5y - 8-5y -2 $y 2/5 (x) - $8 and $4x - ky - $17 $ky - -4x - $17 $y - y-4/k (x) - $17 Now, we know that the equation system won't have a solution only when each variable balances to zero, so let's equate our two $x $variables in order to solve $k the $2/5 (x) - 4/k (x)$ $2/5, -4/k$$-2k/5 - -4$$2k - -20$$k - 10 Again, our value $k $is -10. Our final answer: A, -10. As you can see, there is never a better method for solving the system of equations issue, only the method of solving that appeals to you the most. All roads lead to Rome, so don't stress yourself by trying to find the right way to solve your systemic problems. Typical Equation System Issues Most Equation Systems Questions About THE SAT you know that this is a system of equations, clearly using the words of the system of equations in the matter itself. (We'll prepare to solve this issue later in the manual) Other problems will simply present you with several equations with common variables and ask you to find the value of one of the variables, or even a combination of variables (such as the value of $x and y$ or $x - y$). (We'll figure out how to resolve this issue later in the manual) And finally, the last type of question equation systems will ask you to find a numerical value variable in which there is no solution, as with an example from earlier. Ready to go beyond just reading about the SAT? Then you'll love the free five-day trial for our SAT Complete Prep program. Developed and written by PrepScholar SAT experts, our SAT program adjusts your skill level to more than 40 subskills, so you can focus your training on what will help you get the most points. Click on the button below to try it out! Strategies for Solving Equation Systems Issues All System Equation Issues can be solved using the same methods that we outlined above, but there are additional strategies that you can use to address your issues most accurately and appropriately. #1: To begin with, find the variable that is already the most isolated end goal, but we can only do that by finding one variable to begin with. The easiest way to solve for this variable is to isolate (or eliminate) a variable that has multiple odds or is seemingly the most isolated. For example, $5x - 3y - -$13 $2x and $19 If we use a replacement, it's easiest for us to first isolate the value of the $$y in the second equation. This is already the most isolated variable, as it has no coefficients, so we don't have to deal with fractions once we replace its value in the first equation. If, on the other hand, we used subtraction, it is still better to navigate and eliminate our values y. Why? Because we have $3y$and $y $, which means we only have to multiply the second equation by 3 to match our values $y $. If we were to target and eliminate our values $x $, we would have to multiply both equations - first by 2 and the second by 5 to make our values $x $ match. While you can always find your solutions no matter what variables you choose to isolate or eliminate, it's always nice to save time, energy and hassle (not to mention avoiding possible mistakes), less for easy prey in the first place. #2: Practice all three solutions methods to see which one is the most convenient way for you to decide which equation solving system suits you best by practicing on a few problems (although this will help your flexibility if you can become comfortable using all available solutions, even one or two fit you better than the other (s)). When you test yourself for systemic issues, try to solve a solution one using more than one method in order to see which one is most convenient for you personally. #3: Use subtraction for questions that require finding more than one variable Most multiple variable problem systems solve questions will ask you to find $x and $ or $x - y$, which will almost always be most easily found using the subtraction method. It is also most useful to use the subtraction method when we have three or more variables, especially when it is a combination of multiple variables and three or more variables. We'll see this kind of problem in action in the next section. Ready to solve your system problems and test your strategies? Test? relational algebra questions and solutions pdf

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