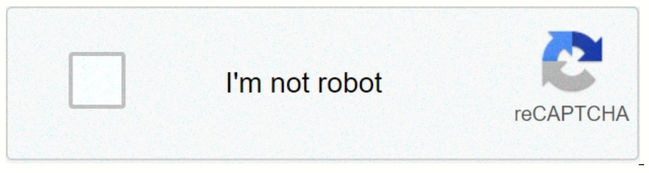

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Linear programming calculator ti 84 plus ce

Updated April 24, 2017 By Damon Verial Linear programming is the field of mathematics concerned with maximizing or minimizing linear functions under constraints. A linear programming problem includes an objective function and constraints. To solve the problem of linear programming, you must meet the requirements of constraints in order to maximize or minimize objective function. The ability to solve linear programming problems is important and useful in many areas, including operations research, business, and economics. Graph the viable region of your problem. The viable region is the region in the space defined by the linear constraints of the problem. For example, if your problem contains the inequalities x + 2y > 4, 3x - 4y < 12, x > 1 and y > 0, you graph the intersection of these regions as your viable region. Find the corner points of the region. If your problem is solvable, there will be visible sharp spots, or corners, in your region. Mark these points on your chart. Calculate the coordinates of these points. If you have graphed the viable region well, you will often be able to immediately know the coordinates of the corner points. If not, you can calculate them by hand by replacing their inequalities between each other and resolving by x and y. In the given example, you'll find (4.0) is a corner point, as well as (1,1,5). Replace these corner points with the objective function of the linear programming problem. You will have as many answers as corner points. For example, assume that its objective function is to maximize the x+y function. In this example, you will have two answers: one for the point (4.0) and one for the point (1,1,5). The answers that these points yield are 4 and 2.5, respectively. Compare all your answers. If your objective function is maximizing, you inspect your answers to find the largest. Similarly, if your objective function is minimization, you inspect your answers, looking for the smallest. In our example, since the objective function is for maximizing purposes, the point (4.0) solves the problem of linear programming, generating a response of 4. About the Author Having obtained a Master's degree in Psychology in East Asia, Damon Verial has been applying his knowledge to related topics since 2010. Having written professionally since 2001, he has been featured in financial publications such as SafeHaven and the McMillian Portfolio. He also runs a financial bulletin in stock barometer. By Jeff McCalla, C.C. Edwards Linear programming is a method for finding the maximum or minimum value of a multivariate function that is limited by a system of inequalities. The following example should help you understand this fairly technical definition of linear programming. A chocolate company sells real chocolate chips and imitation to a local cookie factory. On any day, the Factory needs at least 500 pounds of real chocolate chips and at least 300 pounds of imitation chocolate chips. Real chocolate chips sell for $1.25 a kilo and imitation chocolate chips sell for $0.75 a kilo. If the truck that takes the chocolate chips to the cookie factory can carry a maximum of 1,000 pounds of chocolate chips, how many pounds of each type of chocolate chip should the chocolate company send to the cookie factory in order to maximize its revenue? In this example, the chocolate factory recipe is the recipe function = 1.25x + 0.75y, where x is the number of kilos of real chocolate chips and y is the number of pounds of imitation chocolate chips that the chocolate company sends to the cookie factory. The restrictions indicated in this example are: In other words, this example asks you to find the maximum revenue value = 1.25x + 0.75y subject to the constraint system How do you solve a linear programming problem? The following theorem gives the answer. Linear Programming Theorem: If there is an optimal value (maximum or minimum) of a function constrained by a system of inequalities, then this ideal value occurs in one or more of the vertices of the region defined by the inequality restriction system. This theorem tells you to assess the function at the intersection points of the inequality restriction system. The smallest value found is the minimum value of the function and the highest is its maximum value. To get the Inequality app to help you solve a linear programming problem, follow these steps: System Constraints Graph. The constraint system chart appears on the third screen. Graph of the intersection of the regions in the chart. The intersection graph appears on the second screen. Find and store the intersection points on the chart. the process of finding the intersection points is illustrated here. View the stored intersecting points. The stored points of the crossing appear here. Create a list to the right of the INEQY list and give it a name. The name you give to the list should describe the function in the linear programming problem. In the next step, this function is evaluated at the stored points of the crossing. If an empty, unnamed list does not appear to the right of the INEQY list, place the cursor at the position of the third column and press [2nd][DEL] to insert a blank column, type a name, and then press [ENTER]. If an empty, unnamed list appears in the third column, place the cursor at the position of that column, type a name and press [ENTER]. Use a formula to define the entries in the new list. The formula you enter is the formula that defines the function that you want to optimize. In this example this formula is 1.25x + 0.75y, the definition of the recipe function. As x is hosted in the INEQX list and y in INEQY, formula is inserted into the as 1.25 *∟INEQX + 0.75*∟INEQY. To use a formula to define a list, place the cursor in the list name at the column position. Because formulas must be surrounded by quotations, press [ALPHA][+] to type the first quotation mark. Then type the formula. To enter the name of a list, such as ∟INEQX, press [2nd][STAT] to display a list of list names in the Stat List editor. Repeatedly press the down arrow key to highlight the number to the left of the list and press [ENTER] to insert the list name into your formula. After entering the formula, press [ALPHA][+] to type the closing quotation mark. When you define a list, if you do not use quotes around the formula, it will still generate a list. However, if you change the values in the list, other lists will not update accordingly. For this reason, it is a good idea to use quotation marks around a formula when defining a list. Press and evaluate the function at the intersection points of the inequality restriction system. According to the Linear Programming Theorem, if the function has a maximum and/or minimum value, these values appear in the list you just created. As illustrated here, the chocolate factory in the example can maximize its revenue by sending 700 pounds of real chocolate chips and 300 pounds of imitation chocolate chips. Where is the linear programming in this model? I know how to use Inequalz, but still can not find it:/ :/