

Math 2215 - Calculus 1

Quiz #10 - 2011.03.22

Solutions

Consider the following optimization problem:

Find the positive numbers x and y such that the sum of x and y is as small as possible, assuming that y is the reciprocal of x .

Express this problem as an optimization problem, i.e., write down a function to maximize/minimize along with a constraint function. You do not have to solve the problem.

Clearly we wish to minimize the function $S = x + y$, subject to the constraint $y = \frac{1}{x}$.