

Problem 14

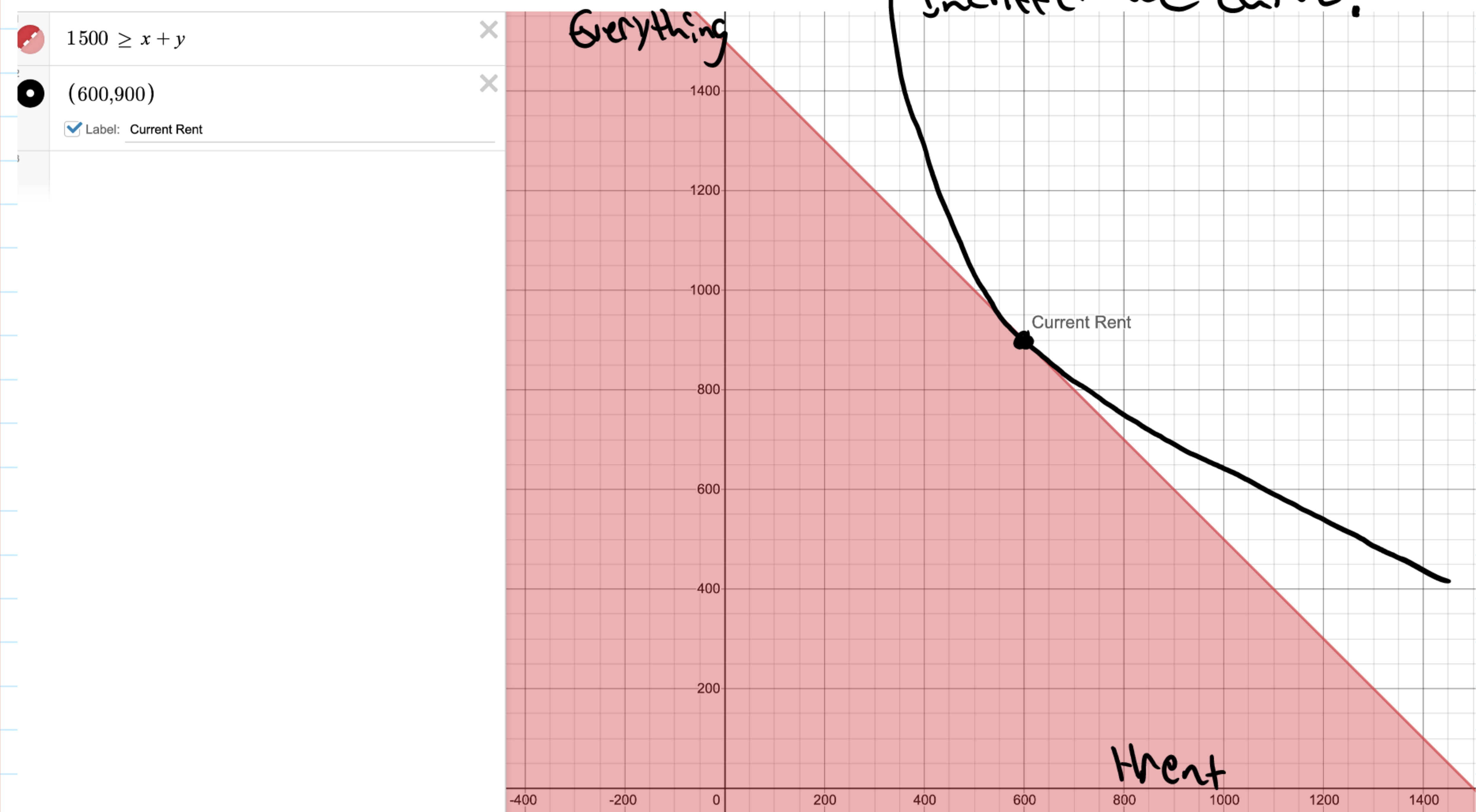
Monday, February 22, 2021 8:56 PM



For purposes of this question, divide all things into housing, H , and money spent on everything else, E . Consider a household with a monthly income of \$1,500 facing a cost of \$1 per square foot to rent housing who chooses to live in a 600 square foot residence.

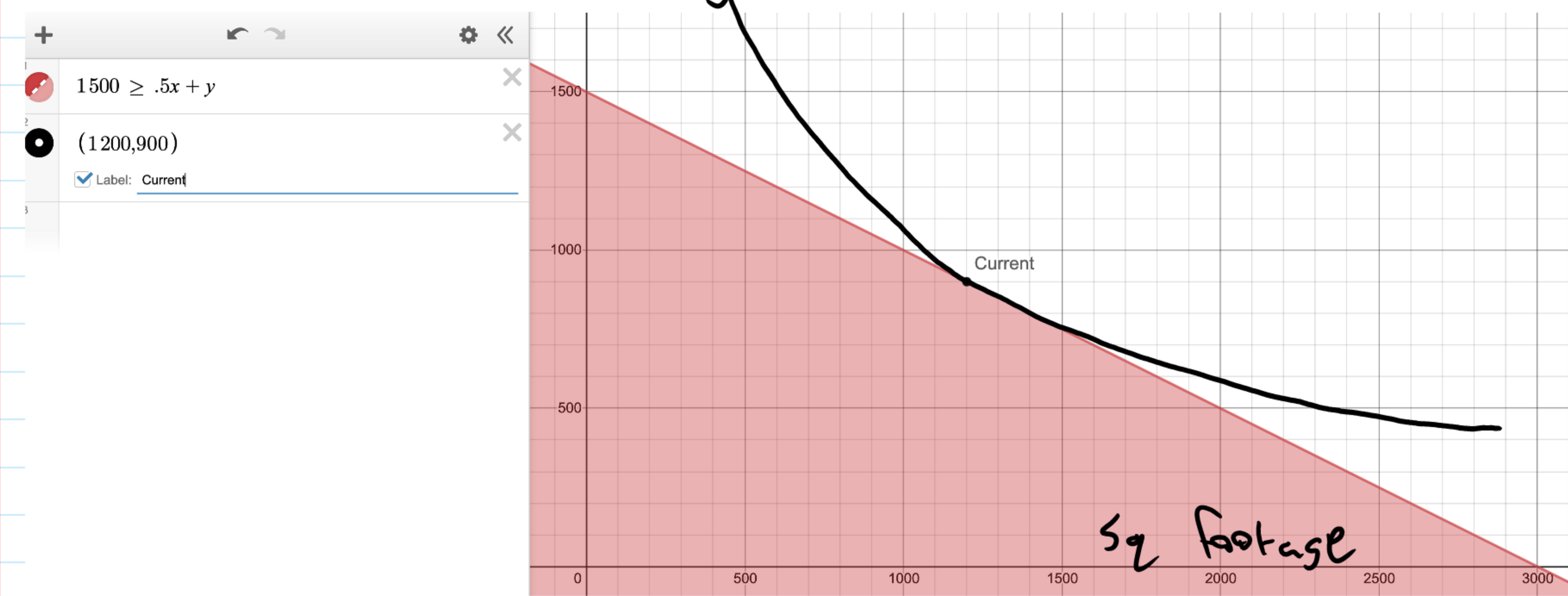
a) Draw the household's budget line and an indifference curve appropriate to their choice.

$1500 = H + E$
 $1500 = 600 + E$
 $E = 900$



b) Consider a proposal to subsidize housing under which this household would face a price of \$0.50 per square foot. In that circumstance, suppose the household chooses to rent a 1,200 square foot residence. Show the new budget line and indifference curve.

$1500 = .5H + E$
 $1500 = .5(1200) + E$
 $1500 = 600 + E$
 $E = 900$



c) Now, for the analytical part... Use your figure to show that if the money spent subsidizing housing had been given to the household to spend as they saw fit (shifting their original budget line out but leaving the housing price at \$1 per square foot), the household would rent a smaller residence, spend more on other things, and reach a higher indifference curve, and so be better off. Explain why this is so. As part of your explanation, consider the rate housing can actually be changed into other things (given by market prices) compared to the rate the household is willing to trade housing for other things at their optimum choice given the subsidized price.

New total \$ is $.5 \cdot 1200 = 600 + 1500 = \2100



We start with the blue line where we have an unsubsidized budget of \$1500. The point chosen by the household is \$600 for rent which leaves \$900 for everything else. Then, if we subsidize half of housing, the subsidized point is still \$600 for housing but is converted to \$1200 of buying power with the subsidy. The amount left for everything else remains the same at \$900. Once the limitations on the subsidy are removed, the total buying power becomes \$2100. At any point past a housing cost of \$1200, the marginal rate of utility for buying anything else decreases faster than the housing-limited subsidy. Meanwhile, the marginal rate of utility for any housing less than \$1200 increases much faster than the subsidized housing. Thus, someone not bound by spending limitations would spend, at most, the same on housing as someone bound by those limitations and has incentive to spend less on housing so they have more for everything else.