The Mr. Mott Apple Company makes two apple products--jars of apple sauce and bottles of apple juice. To preserve their image as primarily an apple sauce company, Mr. Mott has decided that at least 60% of the units produced be apple sauce (each jar of sauce or bottle of juice counts as a “unit”). A jar of apple sauce sells for 95 cents, while a bottle of apple juice sells for $1.35.

 There is a natural demand (without advertising) for 5000 jars of apple sauce and for 3000 bottles of apple juice. The company can increase these demands by running apple sauce or apple juice ads. Each dollar spent advertising apple sauce will create a demand for 3 more jars, while each dollar spent advertising apple juice will create a demand for 5 more bottles. The company will never produce more of a product than the market demand for that product, but it need not meet the demand.

A jar of apple sauce costs 45 cents to make, while a bottle of apple juice costs 65 cents to produce. The Mr. Mott Apple Company has an operations budget of $42,000 with which to finance all of their expenses. Write the linear program whose solution would allow Mr. Mott to maximize the amount of profit that they make.