A certain brewer produces two products, ale and beer, both of which are made from different proportions of corn, hops and malt. Suppose 480 pounds of corn, 160 ounces of hops, and 1,190 pounds of malt are immediately available, and the output is limited by the scarcity of these raw materials. Other resources, such as water, yeast, labor, and energy, may be consumed in the manufacturing process but are considered to be plentiful. Although they may influence the brewer’s willingness to produce beer and ale because of their cost, they do not directly limit the ability to produce. Assume that the brewing of each barrel of ale consumes five pounds of corn, four ounces of hops, and 35 pounds of malt, whereas each barrel of beer requires 15 pounds of corn, four ounces of hops, and 20 pounds of malt. Assume further that all of the ale and beer that can be produced can be sold at current prices which yield a profit of $13 per barrel of ale and $23 per barrel of beer. Formulate a linear program to maximize profits.