1) A sporting goods manufacturer produces skateboards and in-line skates. Its dealers demand at least 30 skateboards per day and 20 pairs of in-line skates per day. The factory can make at most 60 skateboards and 40 pairs of in-line skates per day. The total number of skateboards and pairs of in-line skates cannot exceed 90. The profit on each skateboard is $12 and the profit on each pair of in-line skates is $18. How many of each product should the company manufacture to get the maximum profit?

2) A bakery is making whole-wheat bread and apple bran muffins. For each batch of bread they make $35 profit. For each batch of muffins, they make $10 profit. The bread takes 4 hours to prepare and 1 hour to bake. The muffins take .5 hours to prepare and .5 hours to bake. The maximum preparation time available is 16 hours. The maximum bake time available is 10 hours. How many batches of bread and muffins should be made to maximize profits?
3) The area of a parking lot is 600 square meters. A car requires 6 square meters and a bus requires 30 square meters of space. The lot can handle a maximum of 60 vehicles. If a car costs $3 and a bus cost $8 to park in the lot, determine the number of each vehicle to maximize the amount collected.

4) Paisan’s Pizza makes gourmet frozen pizzas for sale to supermarket chains. They make only deluxe pizzas, one vegetarian and the other with meat. Their business planning has these constraints and objective: Each vegetarian pizza takes 12 minutes of labor and each meat pizza takes 6 minutes of labor. The plant has at most 3,600 minutes of labor available each day. The plant freezer can handle a total of at most 500 pizzas per day. Vegetarian pizza is not quite as popular as meat pizza, so the plant makes at most 200 of this type each day. The sale of each vegetarian pizza earns Paisan’s $3 profit and each meat pizza earns $2 profit. Find the number of each type of pizza that will maximize profit.