Sample Linear Programming Problem

A furniture manufacturer makes two types of furniture – chairs and sofas. The production of the sofas and chairs requires three operations – carpentry, finishing, and upholstery. Manufacturing a chair requires 3 hours of carpentry, 9 hours of finishing, and 2 hours of upholstery. Manufacturing a sofa requires 2 hours of carpentry, 4 hours of finishing, and 10 hours of upholstery. The factory has allocated at most 66 labor hours for carpentry, 180 labor hours for finishing, and 200 labor hours for upholstery. The profit per chair is $90 and the profit per sofa is $75. How many chairs and how many sofas should be produced each day to maximize the profit?