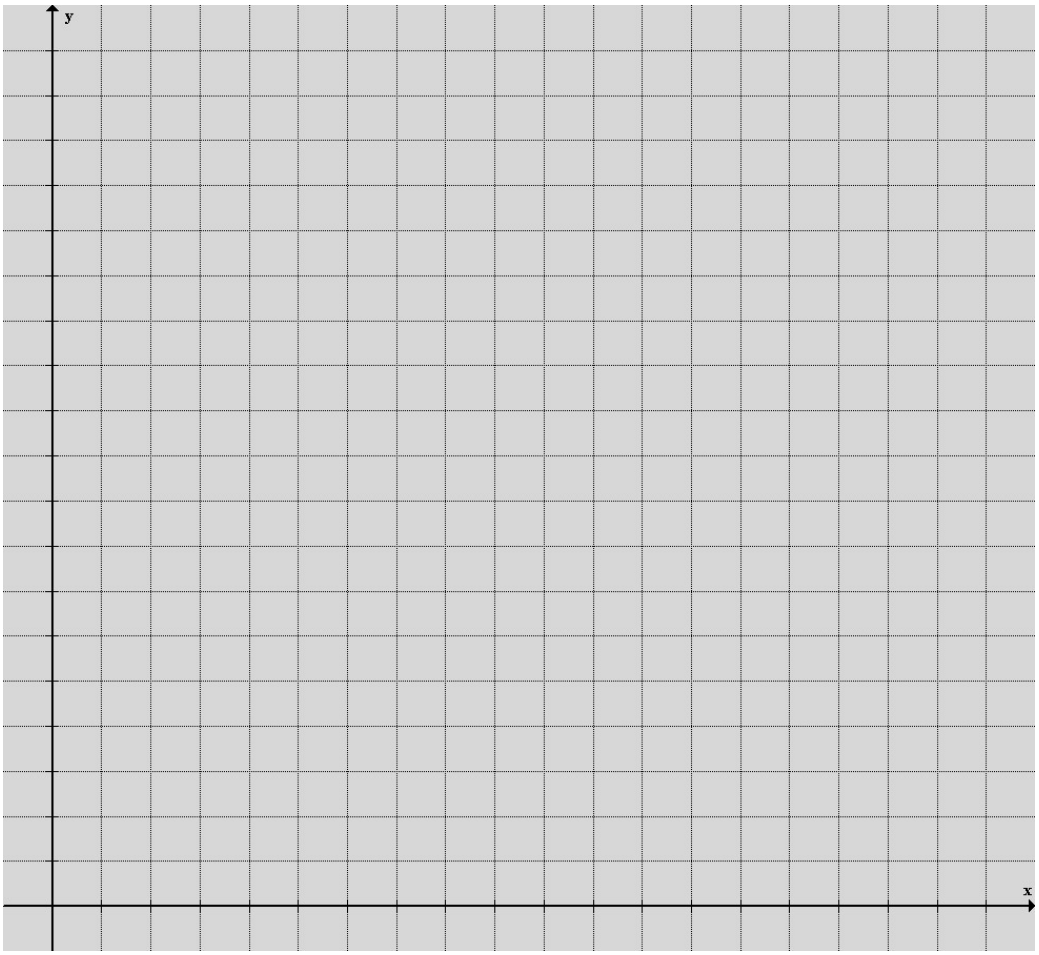
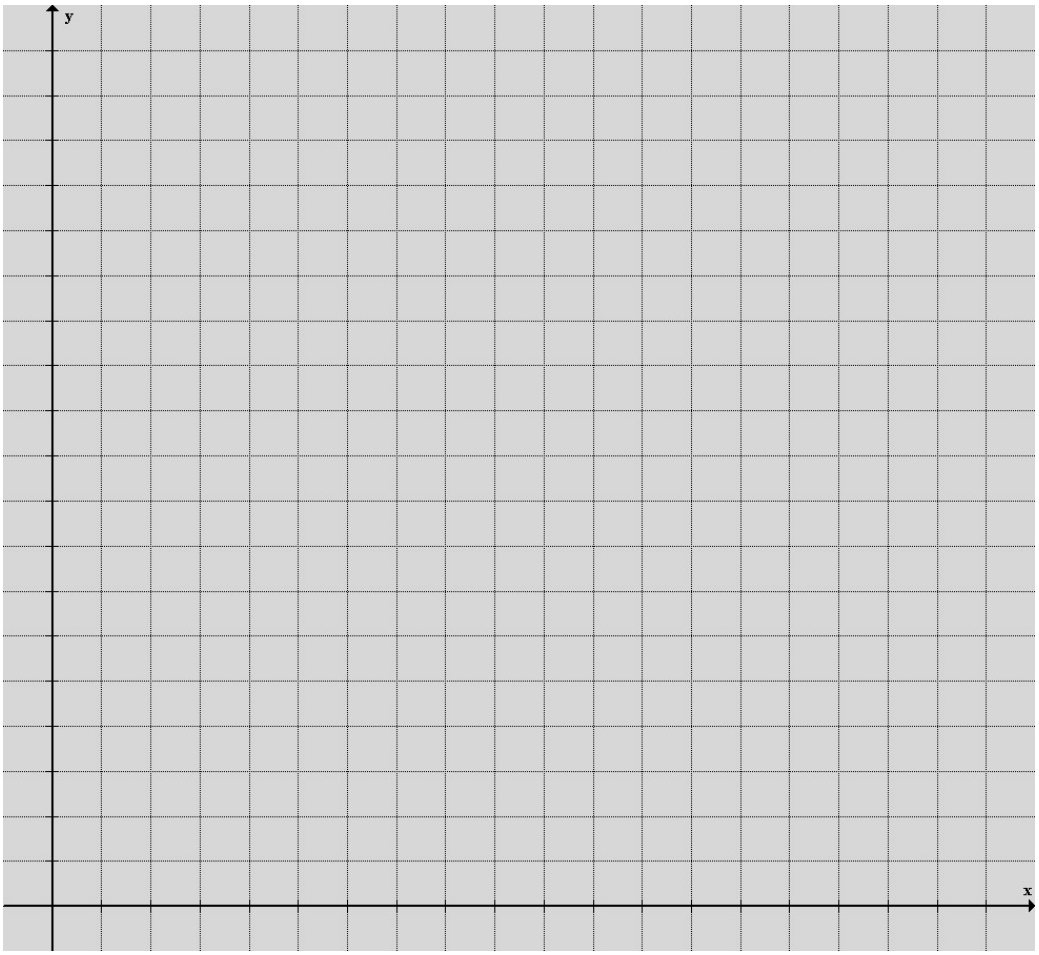
Linear Programming Worksheet

A carpentry shop makes dinner tables and coffee tables. Each week the shop must complete at least 9 dinner tables and 13 coffee tables to be shipped to furniture stores. The shop can produce at most 30 dinner tables and coffee tables combined each week. If the shop sells dinner tables for $120 and coffee tables for $150, how many of each item should be produced for a maximum weekly income? What is the maximum weekly income?



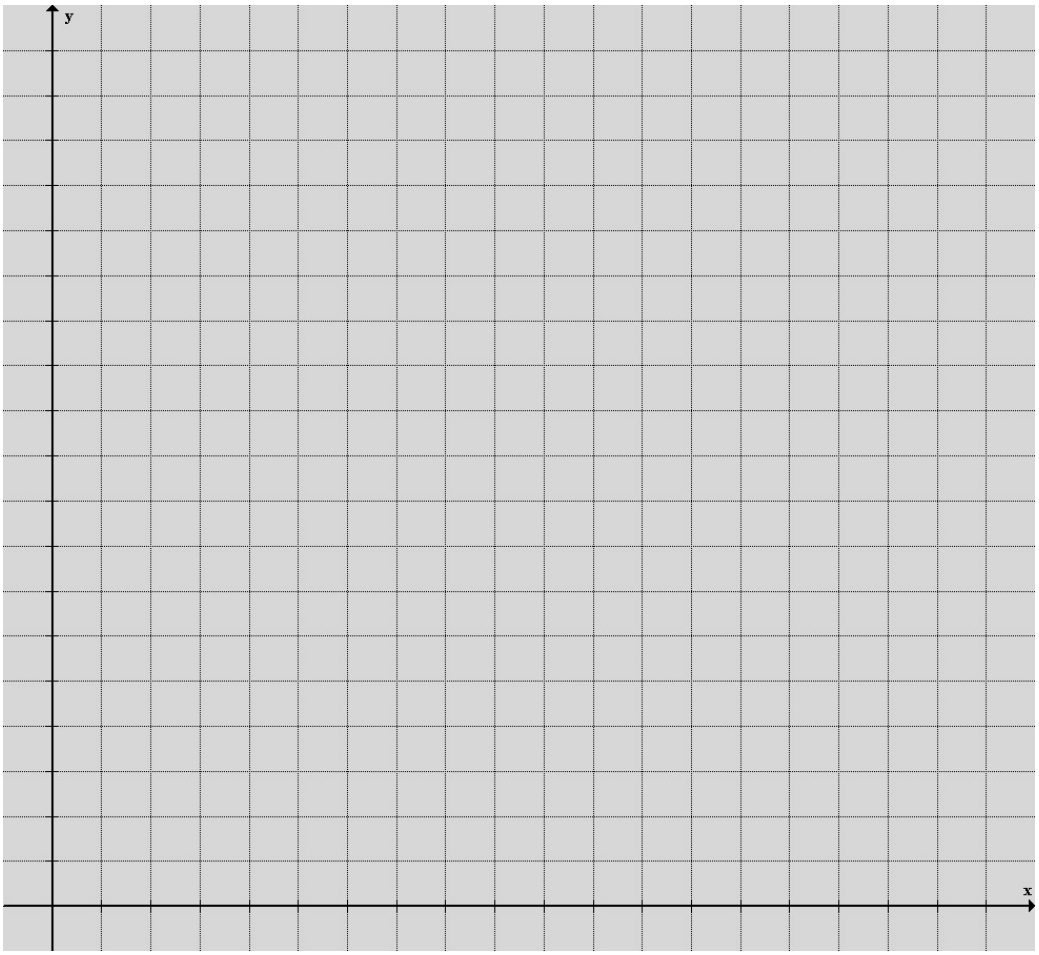
Linear Programming Worksheet

Mrs. Smith grows peaches and apples. At least 500 peaches and 700 apples must be picked daily to meet minimum demands from the buyers. The workers can pick no more than 1200 apples and 1400 peaches daily. The combined number of peaches and apples that the packaging department can handle is 2300 per day. If Mrs. Smith sells her apples at 25¢ each and peaches at 20¢ each, how many of each should be picked daily for maximum income? What is her maximum income?



Linear Programming Worksheet

A machine can produce either nuts or bolts, but not both at the same time. The machine can be used at most 8 hours a day. Furthermore, at most 6 hours a day can be used for making nuts and at most 5 hours a day can be used for making bolts. There is a \$2 profit for each hour the machine makes nuts and a \$3 profit for each hour the machine makes bolts. How many hours per day should the machine make each item in order to maximize profit? What is the maximum profit?



Linear Programming Worksheet

Mr. Beauregard raises only pigs and goats, and this year he intends to raise 16 animals. There is plenty of room in the pigpen, but a lack of space limits the number of goats to 12. One other limitation is money: it costs \$5/day to raise a pig and \$2/day to raise a goat, and Mr. Beauregard can spend only \$50/day on the animals. If Mr. Beauregard can make a profit of \$17.50 per goat and \$14.00 per pig, how many of each should he raise to maximize his profit? What is his maximum profit?