Name _____   Date _____

1. 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?
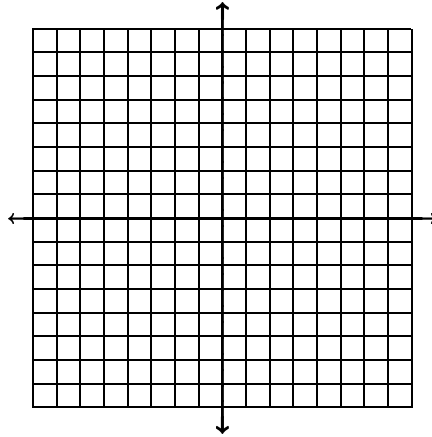
1. _____

2. 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?
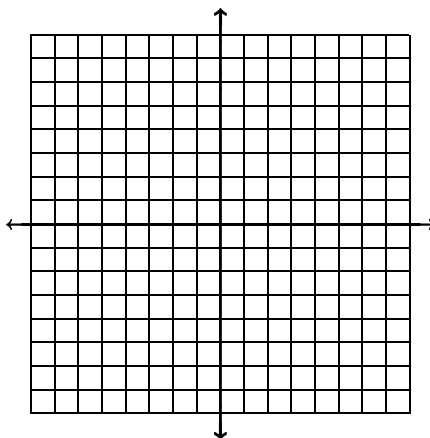
2. _____

3. 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?
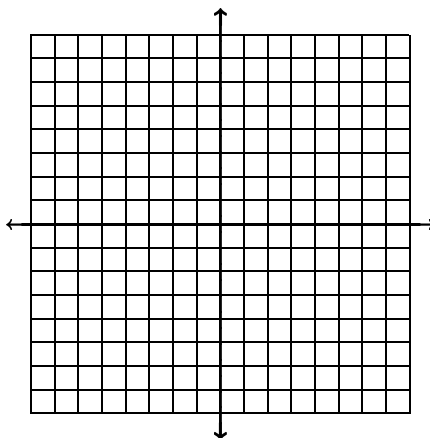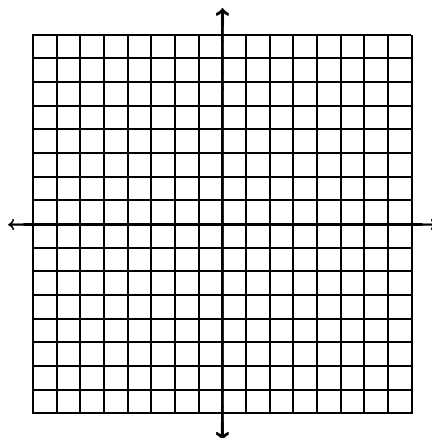
3. _____

4. 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?
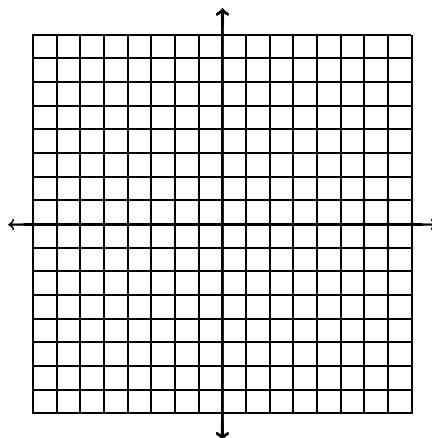
4. _____

5. A theater contains 500 seats. For an upcoming talent show, the theater manager plans to sell $4 and $5 tickets. He must sell at least 200 $4 tickets and 100 $5 tickets for the show to be produced, and he must bring in at least $2000 to break even. How many tickets at each price should be sold to maximize income? What is the maximum income?

5. _____