Name: Date: Period:

For each problem, write a system of inequalities to represent this situation and graph each inequality on the same set of axes. Be sure to define your variables and answer ALL questions being asked.

1. Jane is selling apples and oranges. She has to first buy the fruit from the grocery store and pays $2 per apple and $3 per orange and only has $18 to spend. Together she can sell a maximum of 12 pieces of fruit. Show all the possible combinations of fruit she can sell by graphing, then list two possible combinations.

2. In one week, Ed can mow and rake at most a total of 8 times. He charges $20 for mowing and $10 for raking. He needs to earn more than $125 in one week. Show all the possible combinations of mowing and raking that Ed can do to meet his goal by graphing, then list two possible combinations.

3. The auditorium at McCaskey East High School in Lancaster, PA has 800 seats. Suppose that the drama club has a goal of making $3400 each night of their spring play to cover expenses and raise money for the club. Adult tickets are $7 and student/senior tickets are $4. Write a system of inequalities for the number of seats and the money raised by the drama club. Could the club meet its goal by selling 200 adult and 475 student/senior tickets?

4. Rose is buying T-shirts and shorts. T-shirts cost $12 and shorts cost $20. She plans to spend no more than $120 and buy at least 4 items. Show all the possible combinations of the number of T-shirts and shorts she could buy, then list two possible combinations.

5. Jason is buying grapes for a picnic. Green grapes cost $2 a pound and red grapes cost $3 a pound. He plans to buy at least 4 pounds of grapes and spend no more than $18. List two possible combinations of the number of pounds of green and red grapes he could buy.

6. Leon works at a grocery store for $8 an hour. He also mows lawns for $10 an hour. He needs to earn at least $120 per week, but he does not want to work more than 20 hours per week. Use a system of inequalities to find a possible combination of hours he can work at the grocery store and mowing lawns in order to meet his goal.