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. Jason is buying wings and hot dogs for a party. One package of wings costs $8. Hot dogs cost $5 per pound. He must spend less than $40. Jason knows he will be buying at least 4 pounds of hot dogs. Give two options for Jason when buying wings and hot dogs.

2. Jenny is making jewelry for an Arts and Crafts show. She would like to make at least $90 in sales. She estimates that she will sell at most 50 pieces of jewelry. The bracelets that she is selling cost $2 and the necklaces cost $3. Give two possible combinations of bracelets and necklaces that can be sold in order for Jenny to meet her goal. Justify your answer.

3. The boys' and girls' soccer clubs are trying to raise money for new uniforms. The boys' soccer club is selling candy bars for $2 per piece and the girls' soccer club is selling candles for $4. They must raise more than $600. The girls expect to sell at least 100 candles. Give a combination of candy bars and candles that will help them reach their goal.

4. You can work at most 20 hours next week. You need to earn at least $90 to cover you weekly expenses. Your dog-walking job pays $9 per hour and your job as a car wash attendant pays $6 per hour. Give a combination of hours for each that you can work to reach your goal.

5. Jonah is going to the store to buy candles. Small candles cost $2.50 and large candles cost $5.00. He needs to buy at least 20 candles, and he cannot spend more than $80. Give a combination of candles Jonah can buy.

6. The ninth graders are hosting the next school dance. They would like to make at least a $480 profit from selling tickets. The ninth graders estimate that at most 300 students will attend the dance. They will earn $3 for each ticket purchased in advance and $4 for each ticket purchased at the door.

    Suppose only 30 people buy advance tickets. What is approximately the least amount of people that would need to buy tickets at the door? (Identify one realistic solution). Justify your answer.