CP Geometry **Name:** _____
Box Principle Intro

Box Principle:

1.) If there are three people talking, at least two are of the same gender.

Boxes: Pigeons:

2.) Thirteen people are attending a "Pi Day" celebration. Show that at least two of them were born in the same month.

Boxes: Pigeons:

3.) There are twenty-five students in a class. On the last test, nobody got a grade lower than a "C". Show that there are at least nine students who received the same letter grade.

Boxes: Pigeons:

4.) There are a total of 65 cable channels that viewers can watch. How many people must be watching cable TV at home to guarantee that at least 500 people are watching the same channel?

Boxes: Pigeons:

5.) How many people would you need to have in a crowd to be sure that at least three people have the same birthday (month / day)?

Boxes: Pigeons:

6.) There are 15 toppings for pizzas. If 1,000 people are gathered in the CHS Auditorium, at least how many of them must have the same favorite pizza topping?

7.) How many marbles must Mr. Hamilton have given each group for him to guarantee that at least one cup had at least 15 marbles in it? (Remember, you were given 6 cups each.)

8.) A group of 120 friends is hanging out at the mall and wants to collectively get something to eat. If there are 7 food stores in the mall, at least how many of the friends must have the same place they want to eat?

9.) A collection of 217 students are in the CHS Auditorium, each of whom is involved in exactly one extracurricular among football, basketball, soccer, cheerleading, speech, baseball, tennis, drama, and cross-country. At least how many of the students must be in the same extracurricular?

10.) How many students currently taking math at CHS must be gathered in the gymnasium to guarantee that at least 74 of them have the same math teacher? (There are 8 math teachers at CHS).