1. Construct a box-and-whisker plot of the heights of everyone in the class.

A basic principle of counting states that if operation A can be done in n ways and operation B can be done in m ways, then the total number of ways of doing A then B is $n \times m$. For example, a deli offering to make a sandwich using white or whole wheat bread, any one of turkey, ham, or roast beef, and any one of cheddar, swiss, or provolone is offering you a choice of $2 \times 3 \times 3 = 18$ different sandwiches.

2. A PIN consists of 4 of the digits $0, 1, 2, 3, 4, 5, 6, 7, 8, 9$, each of which may be used any number of times. Our first goal is to determine how many different PINs are possible.

a) How many different PINs start with 123?

b) How many PINs start with 12?

c) How many PINs start with 1?

d) How many different PINs are there in total?

3. How many PINs do not have repeated digits? (Repeat parts a, b, and c of problem 1 with the added condition that digits can't be repeated.)

4. a) How many PINs can be made using exactly numbers $1, 2, 3, 4$ (repetition isn't allowed)?

b) How many PINs can be made using exactly numbers $1, 1, 2, 3$?

c) How many PINs can be made using exactly numbers $1, 1, 1, 2$?

d) How many PINs can be made using exactly numbers $1, 1, 2, 2$?

Challenge. How many different "words" can be made from the letters MISSISSIPPI ("words" because I want you to count any ordering of the letters, even if it doesn't spell an actual word).