**How to “Brute Force” a Logic Problem**

Step # 1 – Assign a variable for every number you are trying to solve in the problem.

Step # 2 – Use nested for loops to have those variable go through the range of all possible values.

Step # 3 – In your inner-most loop, write a condition statement that uses the variables assigned in Step # 1 that satisfies the solution conditions specified in the problem.

**Sample Problem # 1 (2 numbers)**

There is only one pair of numbers that satisfies the equation xy = yx, where x does not equal y. Can you figure out which two numbers? The values of both x and y are under 100.

Step # 1 – I will assign the variables x and y for the two numbers that are to be found in this puzzle.

Step # 2 – x and y are under 100, so I will use two nested for loops that have x and y run the range from 1 to 99.

Step # 3 – My inner-most for loop with have an if statement that makes sure xy = yx and that x != y. When it finds that situation, it outputs the values of x and y.

**Code Solution**

**Sample Problem # 2 (2 variables)**

The age of a man is the same as his wife's age with the digits reversed. The sum of their ages is 99 and the man is 9 years older than his wife. How old is the man?

Step # 1 – 2 variables, m and w (for man and wife)

Step # 2 – Nested for loops (m and w) running the range from 10 to 99

Step # 3 – Make sure the digits in the husband’s age are a reversal of wife, that their sum is 99 and m is 9 bigger than w.

**Code** **Solution**

**Sample Problem # 3 (3 variables)**

I have a bag containing 24 colored balls. The colors are red, green and blue. There are twice as many red balls as green balls, and one more red ball than blue balls. How many of each color ball are there?

Step # 1 – (3 Variables) r, g and b for the number of red, green and blue balls respectively.

Step # 2 – 3 Nested loops, using the variables r, g and b, with each running from 1 to 24

Step # 3 – Make sure g \* 2 = r and r = b + 1 (is this everything?)

**Code** **Solution**