Introduction
This lab session will test the effectiveness of PSO versus a random search when applied to a simple arithmetic problem A + B + C + D = 50.

Step 1
Download the PSO code from the GitHub link provided on MOODLE.

Step 2
Run the GitHub code to ensure everything is compiling and working.

Step 3
Write a new method in the Particle class as follows:

```
Public void updateRandom(){
        A = ??
        B = ??
        C = ??
        D = ??
}
```

This new method should assignment a random number between 0 – 100 to A, B C, and D. This will effectively by a random search.

Step 4
Change the call to p[i].update(p[gBestIndex]) in the PSOArithmetic class to call the new updateRandom(); method.

Step 5
Run an experiment to generate the following grap.

Random search versus PSO
for arithmetic problem A + B + C + D = 50
Over 20 runs, MAX_GENERATIONS = 400, Random (0-100), V_MAX = 2

Random	PSO
400	7
313	22
77	26
294	17
196	22
279	16
310	8
46	12
36	16
95	15
87	19
83	16
38	11
34	25
134	10
217	29
221	9
393	11
167	13
400	21
191	**16.25**