

題目

$f(x)=|x|$ 找最小值

$-100 \leq x \leq 100$

粒度：5

維度：1

迭代：500

實驗：50次

數據

W	C1	C2	
0.3	0.5	0.5	0.353015
0.35	0.5	0.5	0.134083
0.4	0.5	0.5	2.22E-50
0.445	0.5	0.5	2.39E-87
0.44	0.5	0.5	9.01E-89
0.45	0.5	0.5	2.65E-86
0.5	0.5	0.5	3.63E-75
0.55	0.5	0.5	1.06E-64
0.6	0.5	0.5	1.08E-54
0.65	0.5	0.5	4.22E-46
0.7	0.5	0.5	7.10E-38

W	C1	C2	
0.5	0.2	0.5	1.51E-73
0.5	0.25	0.5	9.92E-74
0.5	0.3	0.5	3.81E-74
0.5	0.35	0.5	1.02E-74
0.5	0.4	0.5	8.13E-75
0.5	0.45	0.5	8.13E-75
0.5	0.5	0.5	3.63E-75
0.5	0.55	0.5	4.80E-75
0.5	0.6	0.5	1.08E-74
0.5	0.65	0.5	5.28E-75
0.5	0.7	0.5	3.67E-75

W	C1	C2	
0.5	0.5	0.2	0.0778225
0.5	0.5	0.25	1.81E-78
0.5	0.5	0.3	3.34E-78
0.5	0.5	0.35	1.96E-77
0.5	0.5	0.4	2.06E-76
0.5	0.5	0.45	6.24E-76
0.5	0.5	0.5	3.63E-75
0.5	0.5	0.55	2.04E-74
0.5	0.5	0.6	1.08E-73
0.5	0.5	0.65	1.29E-73
0.5	0.5	0.7	6.45E-73

🔍 超出邊界

C1 : 2
C2 : 2
W : 1→0 (每代-0.002)

(Average) Found Generation: 498
(Average) Value: 2.79866e-31

```
+++++(EXPERIMENT)+++++
lower!!-112.418
lower!!-237.687
lower!!-292.825
lower!!-231.185
upper!!109.173
lower!!-285.443
upper!!249.657
upper!!147.709
lower!!-239.432
upper!!184.723
lower!!-351.621
upper!!168.531
lower!!-415.253
upper!!128.624
```

一直超出邊界

→
參數調小
→

C1 : 1.8
C2 : 2
W : 0.5→0 (每代-0.001)

(Average) Found Generation: 498
(Average) Value: 5.3728e-66

```
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
lower!!-100.306
upper!!111.144
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
upper!!121.778
upper!!122.637
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
lower!!-115.826
lower!!-225.247
lower!!-224.42
lower!!-100.132
+++++(EXPERIMENT)+++++
```

→
參數調小
→

C1 : 0.4
C2 : 0.4
W : 0.5

(Average) Found Generation: 496
(Average) Value: 2.03875e-76

```
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
lower!!-111.946
lower!!-100.563
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
upper!!126.191
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
+++++(EXPERIMENT)+++++
```