

```

1 // [3n+1問題/The 3n+1Problem](1/2)
2 #define IN "P01IN.txt"
3 #define OUT "P01OUT.txt"
4 //*****
5 #include <iostream>
6 #include <ctime>
7 using namespace std;
8 void redir(void);
9 //*****
10 /* Work Space*/
11
12 //*****
13 int main(void)
14 {
15     redir(); //redirection
16 //*****
17 /* Work Space*/
18     int n, count;
19     long long nLong;
20
21     while(scanf("%d", &n) == 1){ //scanf() 傳回成功讀取資料的個數
22         nLong = n; //promotion rule
23
24         count = 0;
25         while(nLong > 1){
26             ++count;
27             if(nLong % 2 == 1){ //判斷是否為奇數
28                 nLong = nLong*3 + 1;
29             }else{ //偶數
30                 nLong /= 2;
31             }
32         }
33         printf("%d\n", count);
34     }
35 //*****
36     freopen("CON", "r", stdin); //取消重新導向
37     freopen("CON", "w", stdout);
38
39     printf("Time used = %.2f\n", (double)clock()/CLK_TCK); //傳回程式目前為止執行的時間
40
41     system("pause");
42     return 0; //the end...
43 }
44
45 void redir(void)
46 {
47     freopen(IN, "r", stdin);
48     freopen(OUT, "w", stdout);
49 }
50 //*****
51 /* Work Space*/
52
53
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63

```

```
64 //[3n+1問題/The 3n+1Problem](2/2)
65 //Input(IN) Sample
66 /*
67 3
68 22
69 987654321
70 */
71
72 //Output(OUT)
73 /*
74 7
75 15
76 180
77 */
```