Suppose that people are questioned one-at-a-time until for the first time there is a birthday match, that is, until two people are found who have the same birthday. If we assume that each person is equally likely to have been born on each of the 365 days in a year, how many people will be questioned until a match is obtained? More precisely, if this experiment is repeated many times under statistically identical conditions, how many people, on average, will be questioned each time the experiment is performed?

Run the following simulation. (It is written in BASIC, but you may use any language you like.) Fill in the table. Attach a printout of your code and output.

```
RANDOMIZE
100 FOR j = 1 TO 10000
110 n = 0
120 n = n + 1
130 IF RND > n / 365 THEN 120
140 m = m + n + 1
150 IF j = 1 THEN PRINT j, n + 1, m / j
160 IF j = 2 THEN PRINT j, n + 1, m / j
170 IF j = 3 THEN PRINT j, n + 1, m / j
180 IF j = 4 THEN PRINT j, n + 1, m / j
190 IF j = 5 THEN PRINT j, n + 1, m / j
200 IF j = 10 THEN PRINT j, n + 1, m / j
210 IF j = 25 THEN PRINT j, n + 1, m / j
220 IF j = 50 THEN PRINT j, n + 1, m / j
230 IF j = 100 THEN PRINT j, n + 1, m / j
240 IF j = 1000 THEN PRINT j, n + 1, m / j
250 IF j = 10000 THEN PRINT j, n + 1, m / j
260 NEXT j
```

Before running the simulation, estimate the long-run average here: _____

Experiment	Number Questioned in this Experiment	Average Number Questioned per Experiment
1		
2		
3		
4		
5		
10		
25		
50		
100		
1000		
10000		