Dec 1 - frequency hopping

```
In[•]:= SetDirectory[NotebookDirectory[]];
```

```
In[•]:= (data = ReadList["input.txt", Number]) ~ Take ~ 10
```

```
Out[•]= {3, 15, -1, -18, 3, -10, 3, 10, -8, -20}
```

Part 1 - sum all the numbers

```
In[•]:= Plus @@ data
```

```
Out[•]= 556
```

Find the first duplicate

Extend the data and make the index start with zero

```
In[•]:= modData[k_] := data[[Mod[k, Length[data]] + 1]]
```

```
In[•]:= Clear[seen]
```

```
In[•]:= seen[k_] = False;
```

```
In[•]:= tot = 0; n = 0;
```

```
In[•]:= Do[seen[tot] = True;
     n++; tot += modData[k];
     If[seen[tot], Print["n=", n, ", tot=", tot]; Return[]], {k, 0, 1 000 000}]
```

```
     n=143 548, tot=448
```

```
In[•]:= n / Length[data] // N
```

```
Out[•]= 144.56
```