

```
In[2]:= f[n_] := 1/n
```

```
In[3]:= g[n_] := Sin[n]
```

```
In[4]:= T := {1, 2, 3, 4, 10, 19, 36, 100, 250, 500, 1000, 2137, 10 000,
             100 000, 10^6, 10^7, 10^8, 10^9, 2 000 000 000, 2 147 483 646, 2 147 483 647}
```

```
In[8]:= N[DirichletConvolve [f[n], g[n], n, 2137]]
```

```
Out[8]= 0.657517
```

```
In[9]:= For[i = 1, i ≤ Length[T], i++ ,
           Print[T[[i]], "\t", First[Timing[N[DirichletConvolve [f[n], g[n], n, T[[i]]]]]]
         ]
       ]
```

1	0.000126
2	0.000174
3	0.000075
4	0.000078
10	0.000079
19	0.000072
36	0.000111
100	0.000204
250	0.000141
500	0.00012
1000	0.000161
2137	0.000078
10 000	0.000171
100 000	0.000218
1 000 000	0.000332
10 000 000	0.000401
100 000 000	0.000404
1 000 000 000	0.000596
2 000 000 000	0.000638
2 147 483 646	0.000933
2 147 483 647	0.000156

```
In[11]:= For[i = 1, i ≤ Length[T], i++ ,
           Print[ First[Timing[N[DirichletConvolve [f[n], g[n], n, T[[i]]]]] * 1000]
         ]
       ]
```

0.27

0.138

0.104

0.072

0.073

0.079

0.099

0.092

0.082

0.099

0.121

0.061

0.207

0.249

0.257

0.369

0.463

0.529

0.549

0.932

0.166