

Brian — PS 21 — 2025-04-25 — Solution

EIWL3 Sections 47 and 48

Exercises from *EIWL3* Section 47

```
In[6]:= (* 47.1 *) Total[Array[# (# + 1) &, 1000]]
```

```
Out[6]= 334 334 000
```

```
In[13]:= (* 47.2 *) Nest[ $\frac{1}{1 + \#}$  &, x, 10]
```

```
Out[13]=
```

$$1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + x}}}}}}}}$$

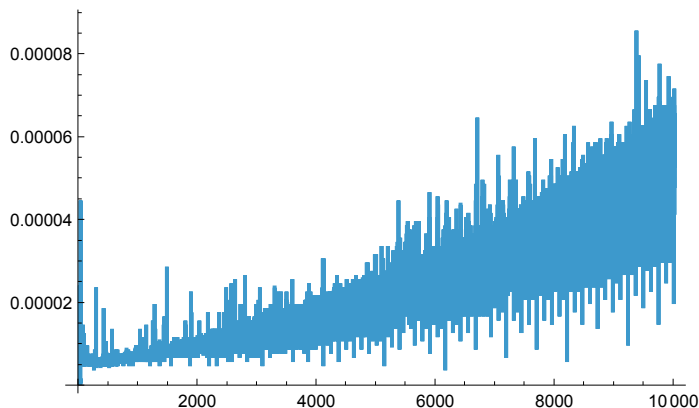
```
In[16]:= (* 47.3 *) Flatten[Array[{#1, #2} &, {10, 10}]]
```

```
Out[16]=
```

```
{1, 1, 1, 2, 1, 3, 1, 4, 1, 5, 1, 6, 1, 7, 1, 8, 1, 9, 1, 10, 2, 1, 2, 2, 2, 3, 2, 4, 2, 5, 2, 6, 2, 7, 2, 8, 2, 9, 2, 10, 3, 1, 3, 2, 3, 3, 3, 4, 3, 5, 3, 6, 3, 7, 3, 8, 3, 9, 3, 10, 4, 1, 4, 2, 4, 3, 4, 4, 4, 5, 4, 6, 4, 7, 4, 8, 4, 9, 4, 10, 5, 1, 5, 2, 5, 3, 5, 4, 5, 5, 5, 6, 5, 7, 5, 8, 5, 9, 5, 10, 6, 1, 6, 2, 6, 3, 6, 4, 6, 5, 6, 6, 6, 7, 6, 8, 6, 9, 6, 10, 7, 1, 7, 2, 7, 3, 7, 4, 7, 5, 7, 6, 7, 7, 7, 8, 7, 9, 7, 10, 8, 1, 8, 2, 8, 3, 8, 4, 8, 5, 8, 6, 8, 7, 8, 8, 8, 9, 8, 10, 9, 1, 9, 2, 9, 3, 9, 4, 9, 5, 9, 6, 9, 7, 9, 8, 9, 9, 9, 10, 10, 1, 10, 2, 10, 3, 10, 4, 10, 5, 10, 6, 10, 7, 10, 8, 10, 9, 10, 10}
```

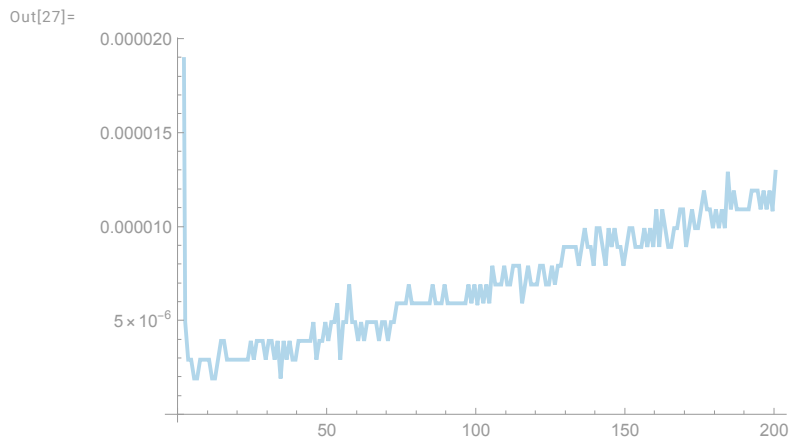
```
In[22]:= (* 47.4 *) ListLinePlot[Array[{#, Timing[#] ][1]} &, 10 000]]
```

```
Out[22]=
```



```
(* 47.5 *)
```

```
ListLinePlot[Array[{#, Timing[Sort[RandomSample[Range[#], #]]][[1]]] &, 200]]
```



Exercises from *EIWL3* Section 48