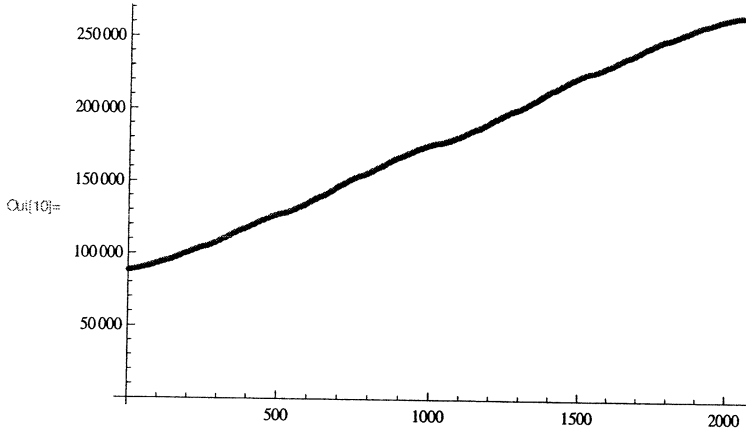


```

In[1]:= s[0] = 0; s[1] = 1; s[n_?EvenQ] := s[n] = s[n/2];
        s[n_?OddQ] := s[n] = s[(n+1)/2] + s[(n-1)/2]
In[3]:= fstar[n_] := Sum[s[k], {k, 1, n-1}] + s[n]/2
In[10]:= ListPlot[Table[fstar[n], {n, 2^11, 2^12}]]

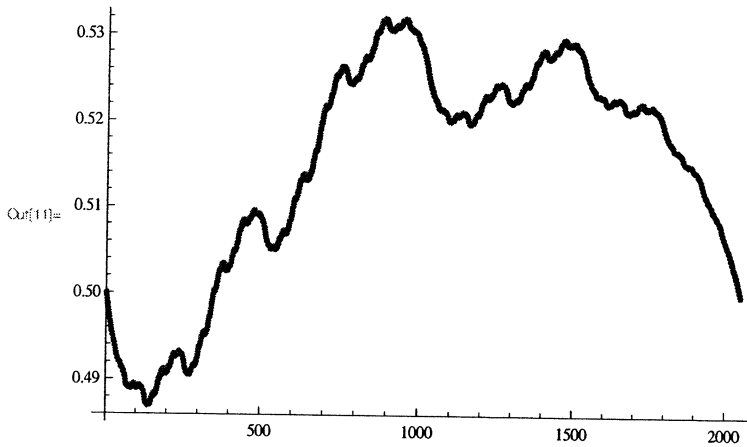
```



```

In[11]:= ListPlot[Table[fstar[n] / n^(Log[3] / Log[2]), {n, 2^11, 2^12}]]

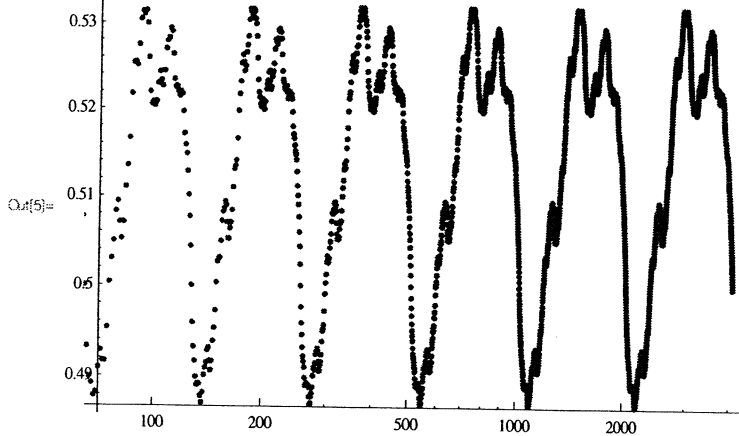
```



```

In[5]:= ListLogLogPlot [
        Table[fstar[n] / n^(Log[3] / Log[2]), {n, 1, 4096}]]

```

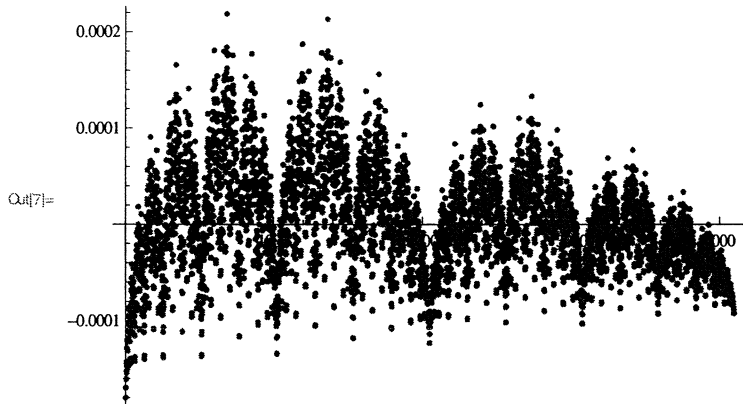


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```

In[7]:= ListPlot[Table[fstar[(n + 1)] / (n + 1) ^ (Log[3] / Log[2]) -
      fstar[n] / n ^ (Log[3] / Log[2]), {n, 2 ^ 12, 2 ^ 13}]]

```



```

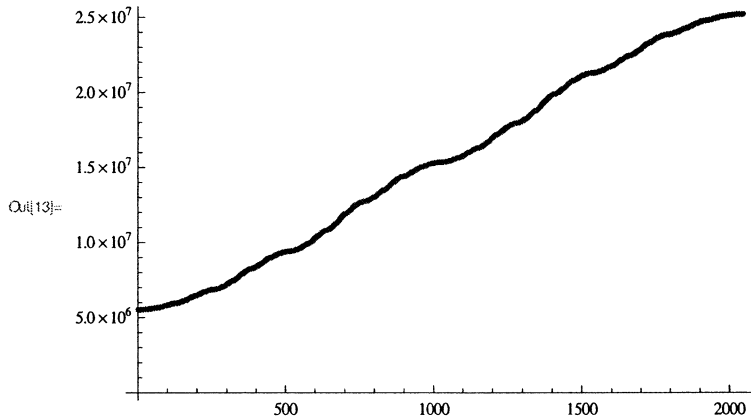
In[12]:= fstar2[n_] := Sum[s[k] ^ 2, {k, 1, n - 1}] + s[n] ^ 2 / 2

```

```

In[13]:= ListPlot[Table[fstar2[n], {n, 2 ^ 11, 2 ^ 12}]]

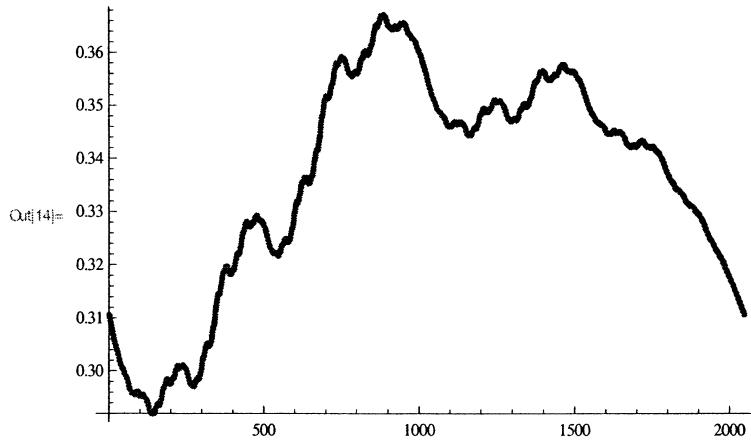
```



```

In[14]:= ListPlot[Table[fstar2[n] / n ^ (Log[(5 + Sqrt[17]) / 2] / Log[2]),
      {n, 2 ^ 11, 2 ^ 12}]]

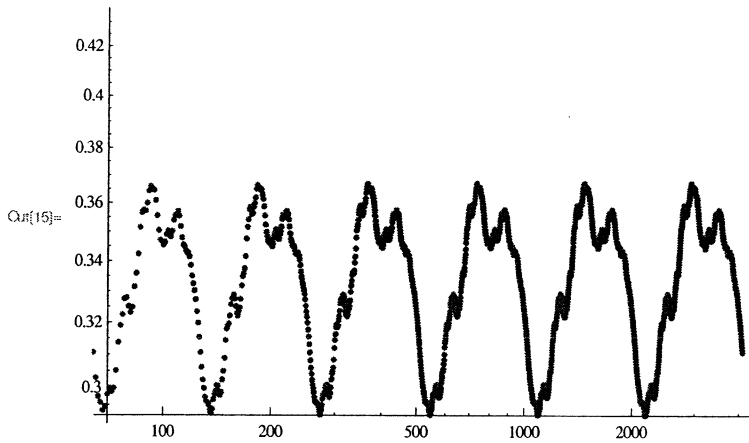
```



```

In[15]:= ListLogLogPlot[Table[
  fstar2[n] / n ^ (Log[(5 + Sqrt[17]) / 2] / Log[2]), {n, 1, 4096}]]

```



```

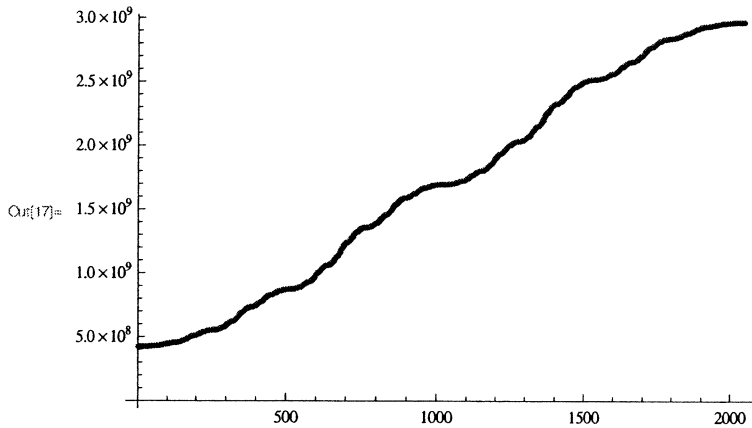
In[16]:= fstar3[n_] := Sum[s[k] ^ 3, {k, 1, n - 1}] + s[n] ^ 3 / 2

```

```

In[17]:= ListPlot[Table[fstar3[n], {n, 2 ^ 11, 2 ^ 12}]]

```



```

In[19]:= ListPlot[
  Table[fstar3[n] / n ^ (Log[7] / Log[2]), {n, 2 ^ 11, 2 ^ 12}]]

```



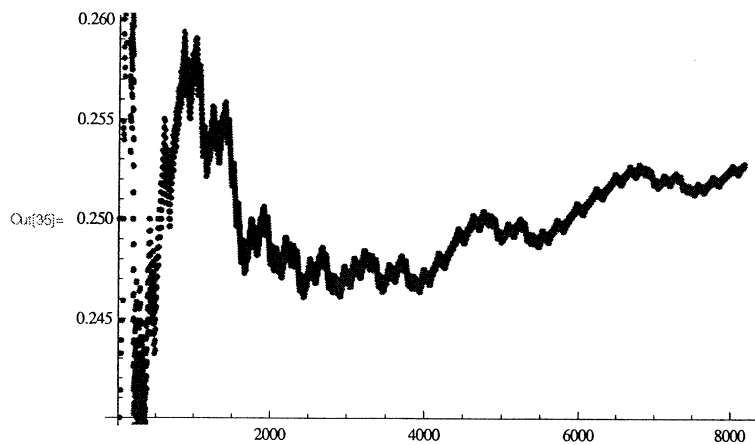
```

In[33]:= Table[Mod[s[n], 3], {n, 0, 2 ^ 16}];

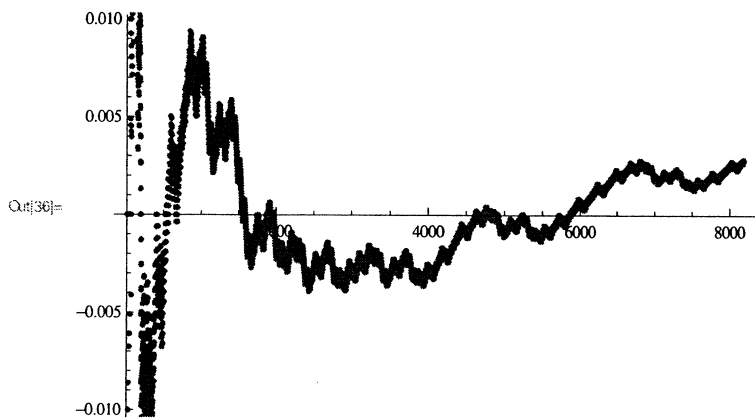
```

```
In[34]:= a[n_] := Count[Table[%33[[k]], {k, 1, n}], 0] / n
```

```
In[35]:= ListPlot[Table[a[n], {n, 1, 2^13}]]
```



```
In[36]:= ListPlot[Table[a[n] - 1/4, {n, 1, 2^13}]]
```



```
In[37]:= ListPlot[Table[Sqrt[n] (a[n] - 1/4), {n, 1, 2^13}]]
```

