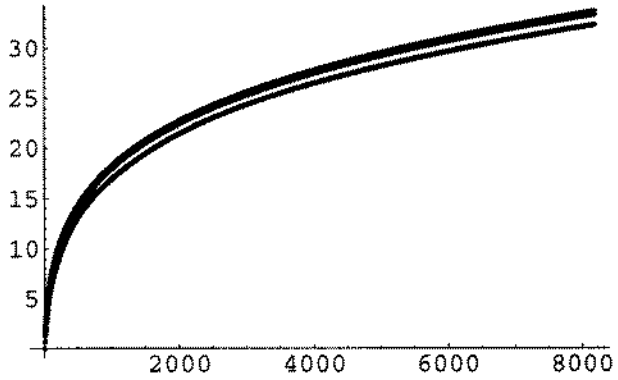
```
In[2]:= u[0] = 1;
        u[1] = -1;
        u[2] = -1;
        u[3] = 2;
        u[n_?EvenQ] := u[n] = u[n / 2] - u[n - 1] - u[n - 2]
        u[n_?OddQ] := u[n] = -u[n - 1] - u[n - 2]

In[8]:= u[12]

Out[8]= 10

In[17]:= TableForm[Table[{n, u[3 * 2^n], N[Log[u[3 * 2^n]]]}, {n, 0, 11}]]

Out[17]//TableForm=
        0       2                   0.693147
        1       4                   1.38629
        2       10                  2.30259
        3       34                  3.52636
        4       178                 5.18178
        5       1506                7.31721
        6       20306               9.91867
        7       465474              13.0508
        8       18210226            16.7175
        9       1240131490          20.9385
        10      150953180178        25.7402
        11      32553512879874      31.1139

In[56]:= TableForm[Table[{n, u[2^n], N[Log[-u[2^n]]]}, {n, 0, 13}]]

Out[56]//TableForm=
        0       -1                  0.
        1       -1                  0.
        2       -2                  0.693147
        3       -2                  0.693147
        4       -10                 2.30259
        5       -18                 2.89037
        6       -282                5.64191
        7       -1250               7.1309
        8       -51050              10.8406
        9       -581810             13.2739
        10      -72041146           18.0927
        11      -2327650178         21.5681
        12      -952570276106       27.5824
        13      -95167520719186     32.1867
```

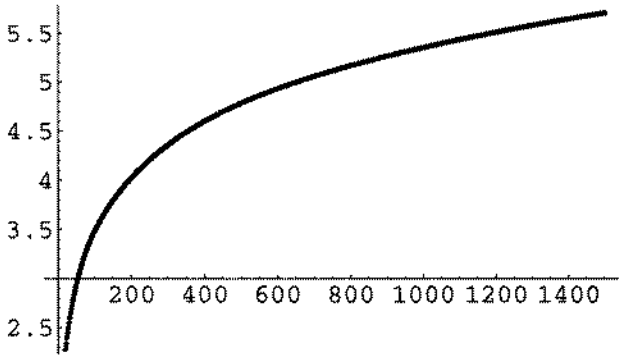
In[19]:= **ListPlot[Table[{n, Log[Abs[u[n]]]}, {n, 1, 8192}]]**

Graphics::gptn : Coordinate -∞ in {5, -∞} is not a floating-point number. More...



Out[19]= - Graphics -

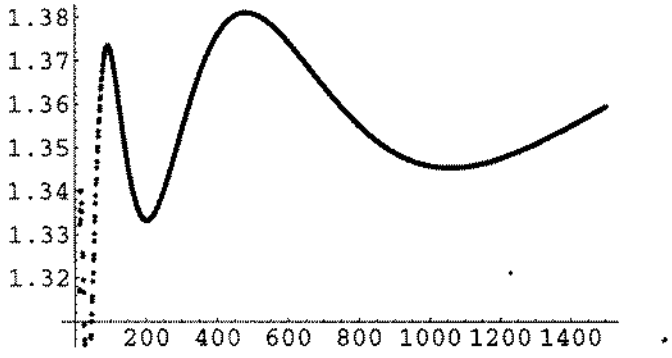
In[58]:= **ListPlot[Table[{n, Log[Abs[u[6 n]]] - Log[Abs[u[3 n]]]}, {n, 1, 1500}]]**



Out[58]= - Graphics -

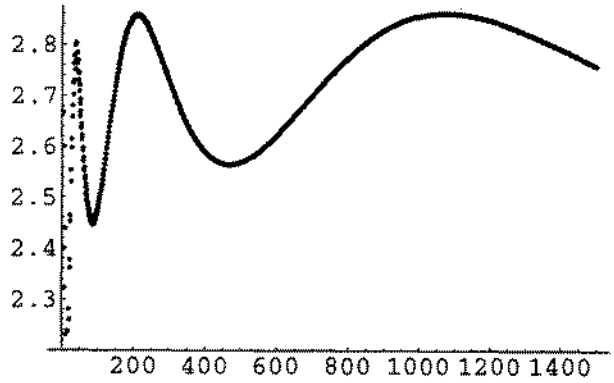
- Graphics -

In[37]:= **ListPlot[Table[{n, Abs[u[6 n] / u[6 n + 1]]}, {n, 1, 1500}]]**



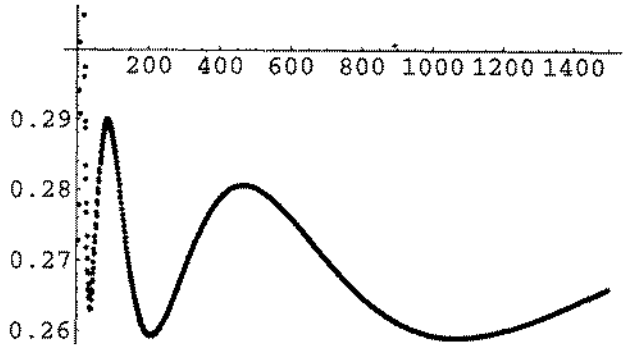
Out[37]= - Graphics -

In[39]:= **ListPlot[Table[{n, Abs[u[6 n + 1] / u[6 n + 2]]}, {n, 1, 1500}]]**



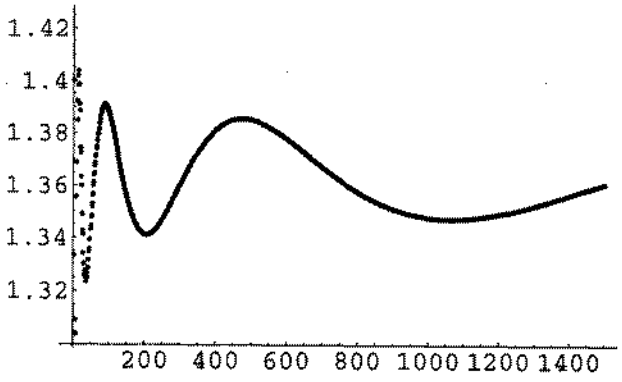
Out[39]= - Graphics -

In[40]:= **ListPlot[Table[{n, Abs[u[6 n + 2] / u[6 n + 3]]}, {n, 1, 1500}]]**



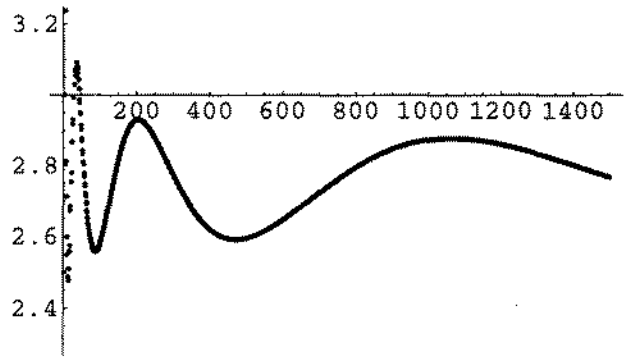
Out[40]= - Graphics -

In[38]:= **ListPlot[Table[{n, Abs[u[6 n + 3] / u[6 n + 4]]}, {n, 1, 1500}]]**



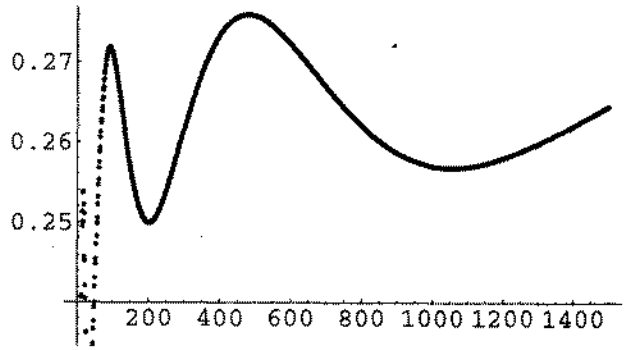
Out[38]= - Graphics -

In[41]:= **ListPlot[Table[{n, Abs[u[6 n + 4] / u[6 n + 5]]}, {n, 1, 1500}]]**



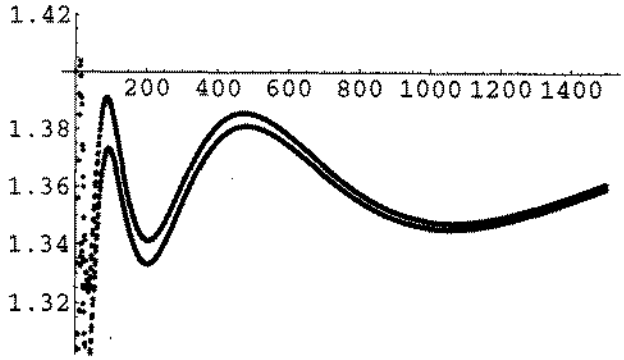
Out[41]= - Graphics -

In[42]:= **ListPlot[Table[{n, Abs[u[6 n + 5] / u[6 n + 6]]}, {n, 1, 1500}]]**



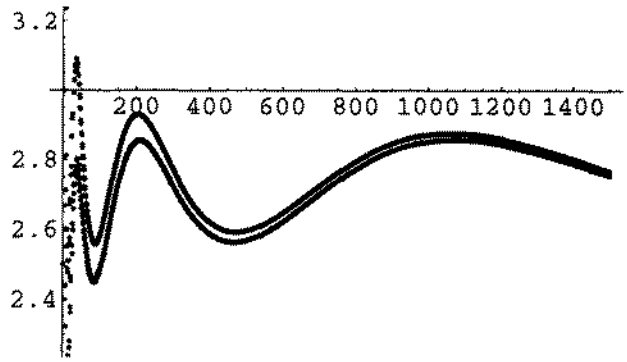
Out[42]= - Graphics -

In[44]:= **Show[%37, %38]**



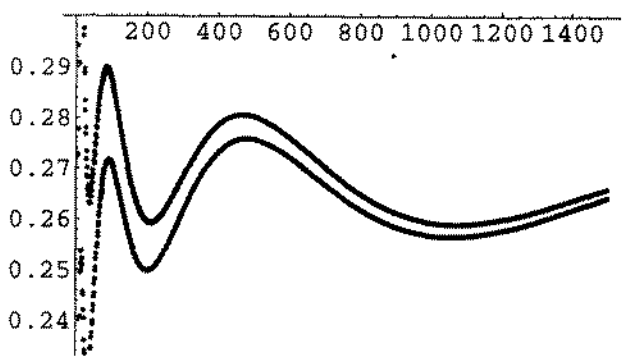
Out[44]= - Graphics -

In[45]:= **Show[%39, %41]**



Out[45]= - Graphics -

In[46]:= **Show[%40, %42]**



Out[46]= - Graphics -