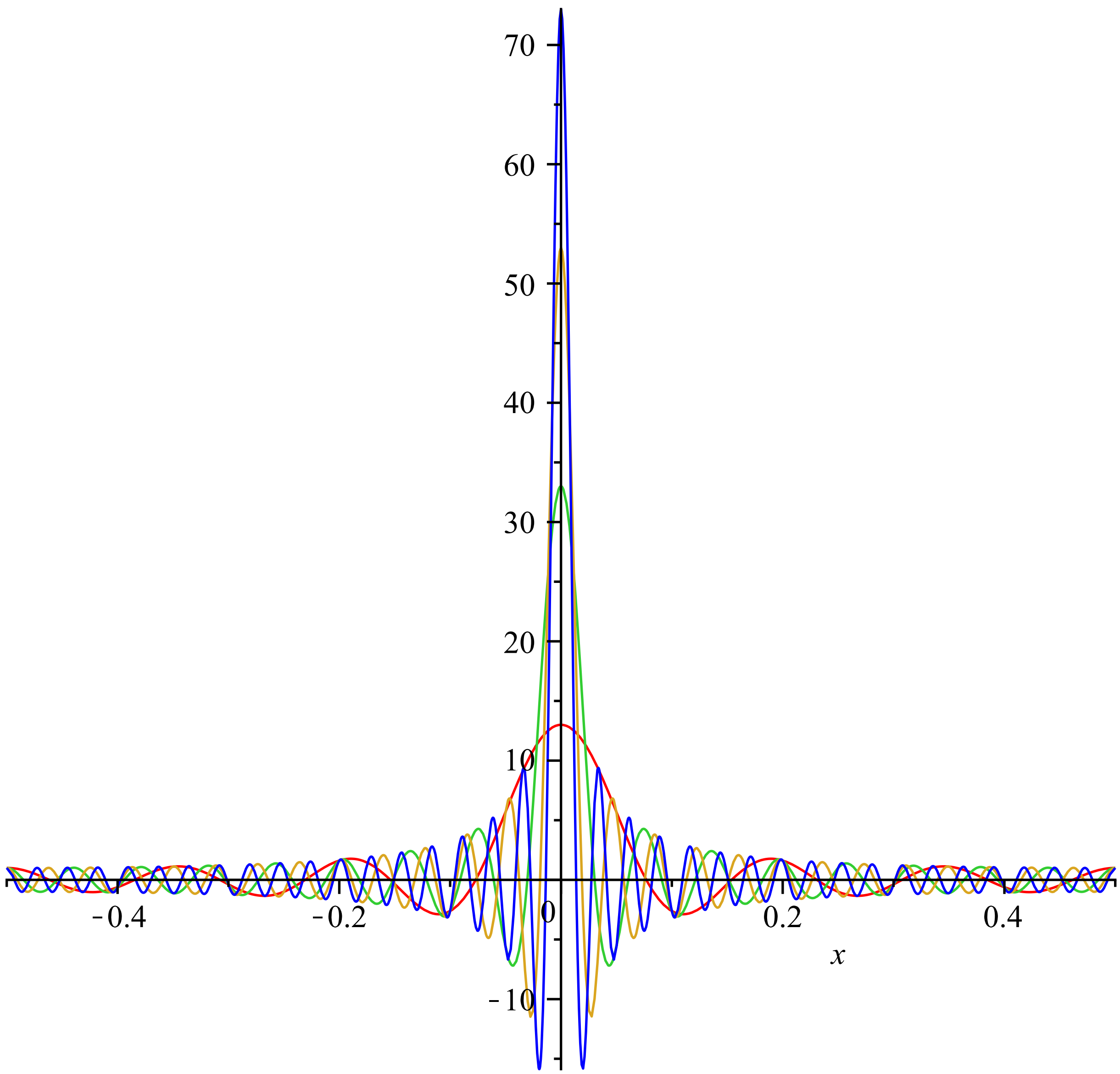
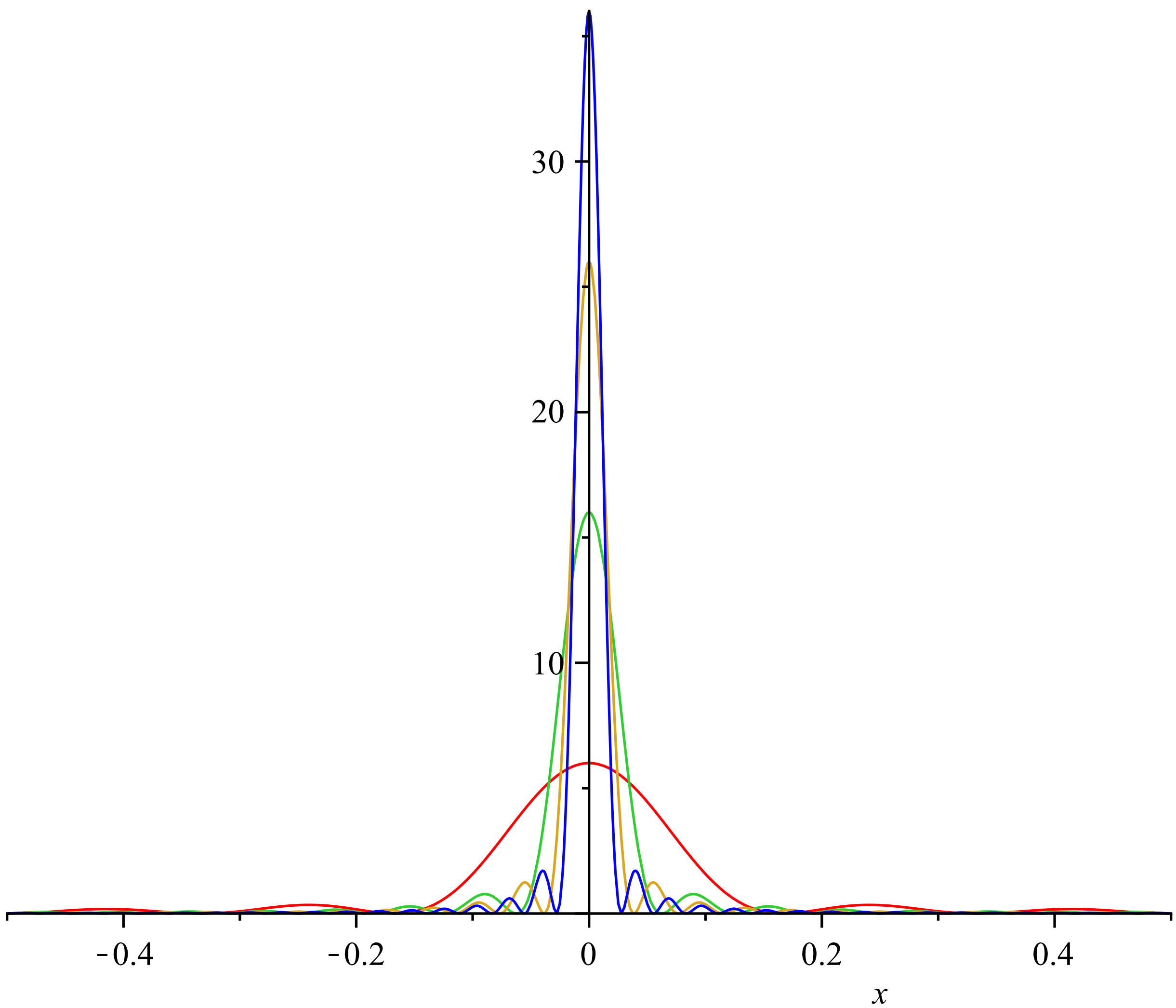
Dirichlet sequence:

```
> plot([seq(sin(2*Pi*(2*N+1)*x/2)/sin(2*Pi*x/2),N=6..36,10)],x=
  -0.5..0.5);
```



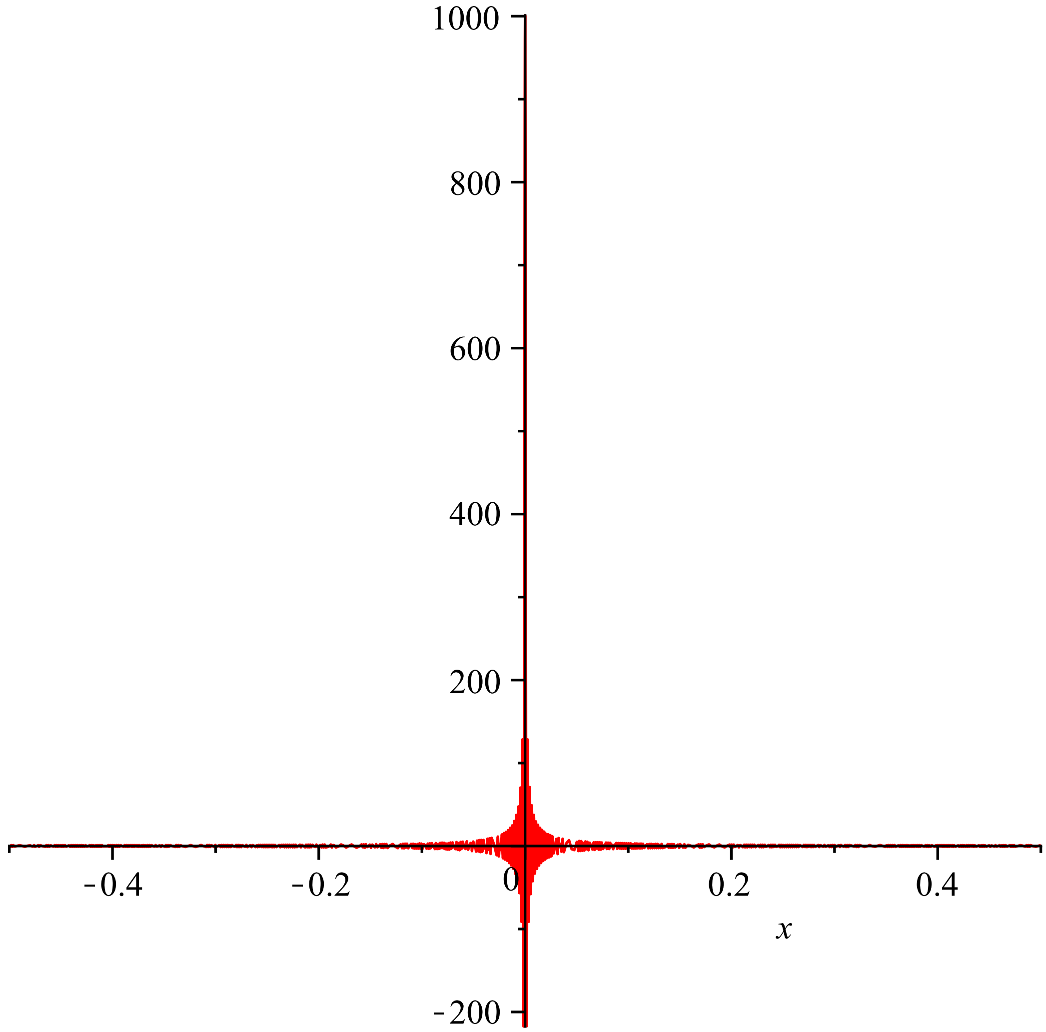
Fejer sequence:

```
> plot([seq((1/N)*(sin(2*Pi*N*x/2)/sin(2*Pi*x/2))^2,N=6..36,10)],x=
  -0.5..0.5);
```

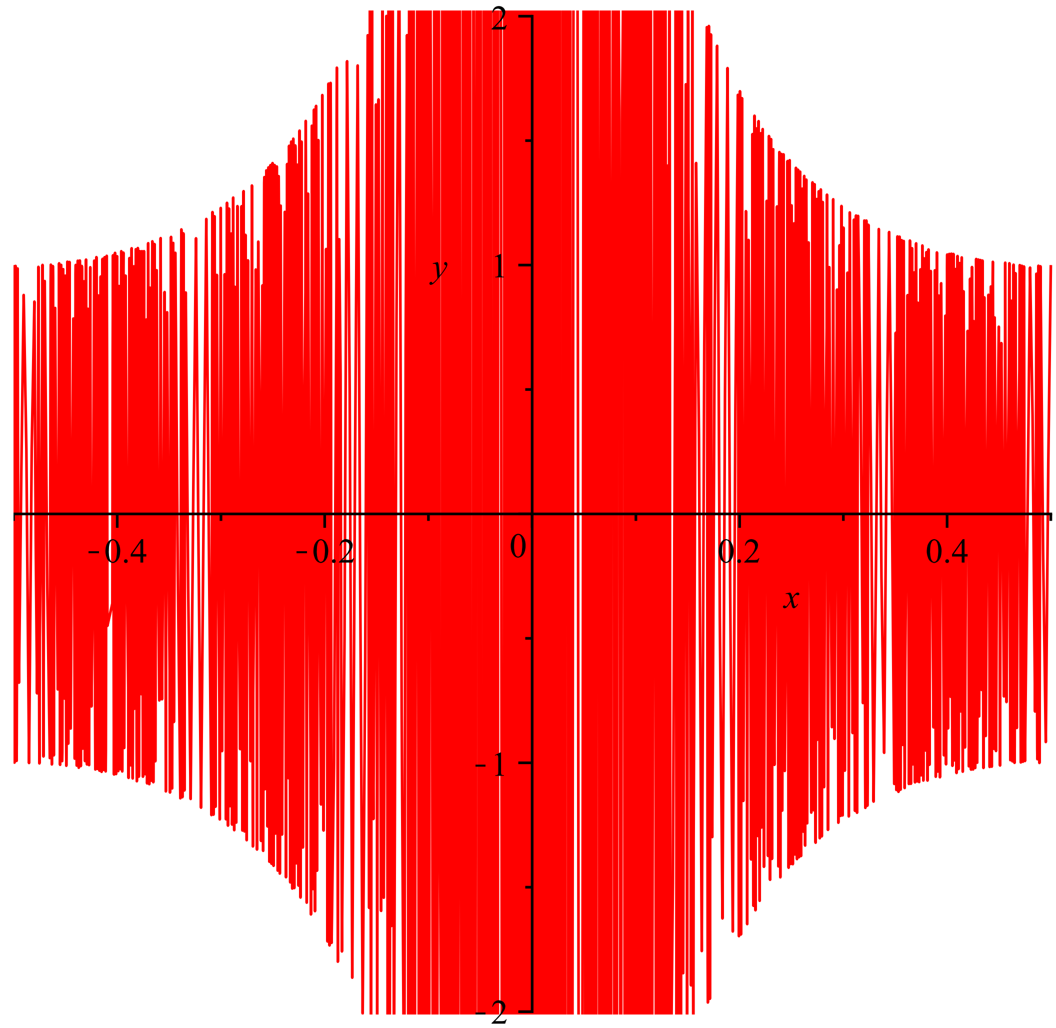


Dirichlet sequence, later on:

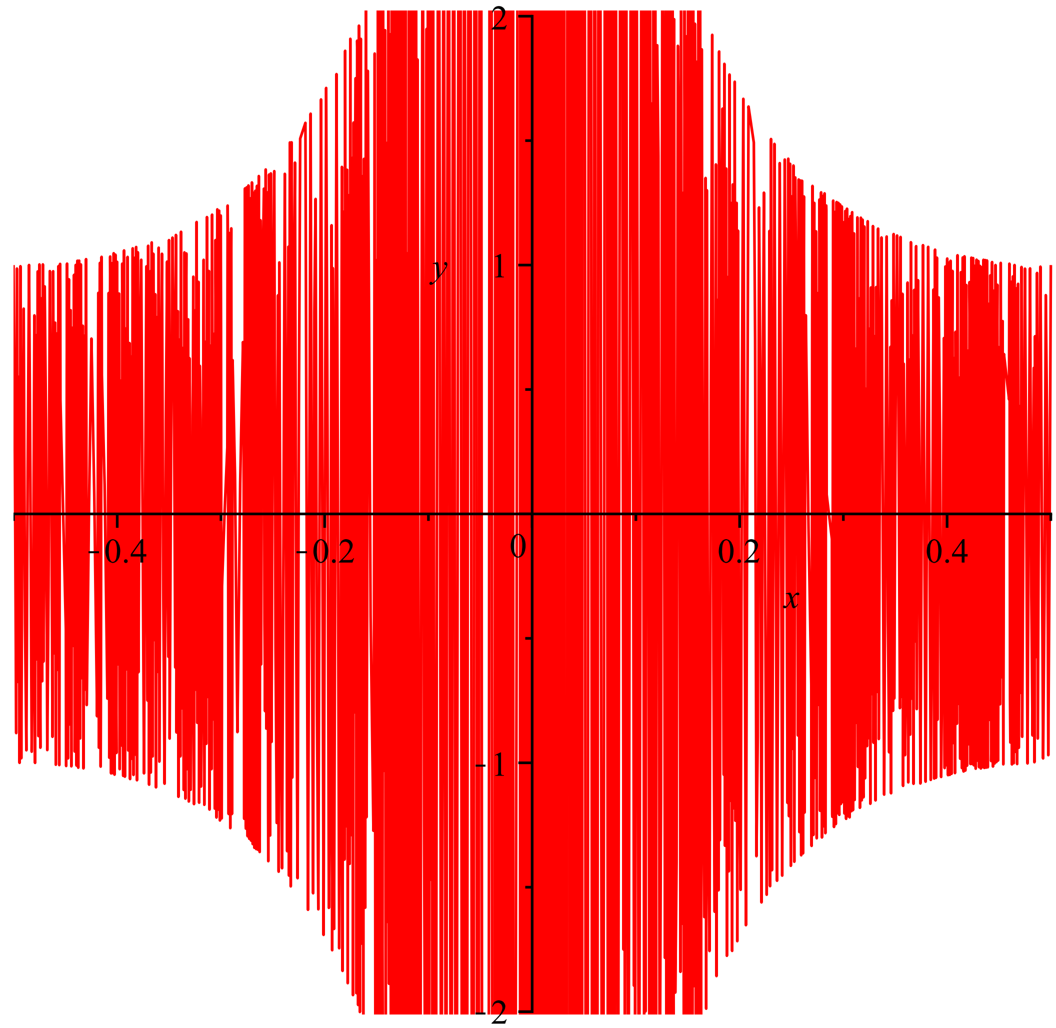
```
> plot(sin(2*Pi*(2*500+1)*x/2)/sin(2*Pi*x/2),x=-0.5..0.5);
```



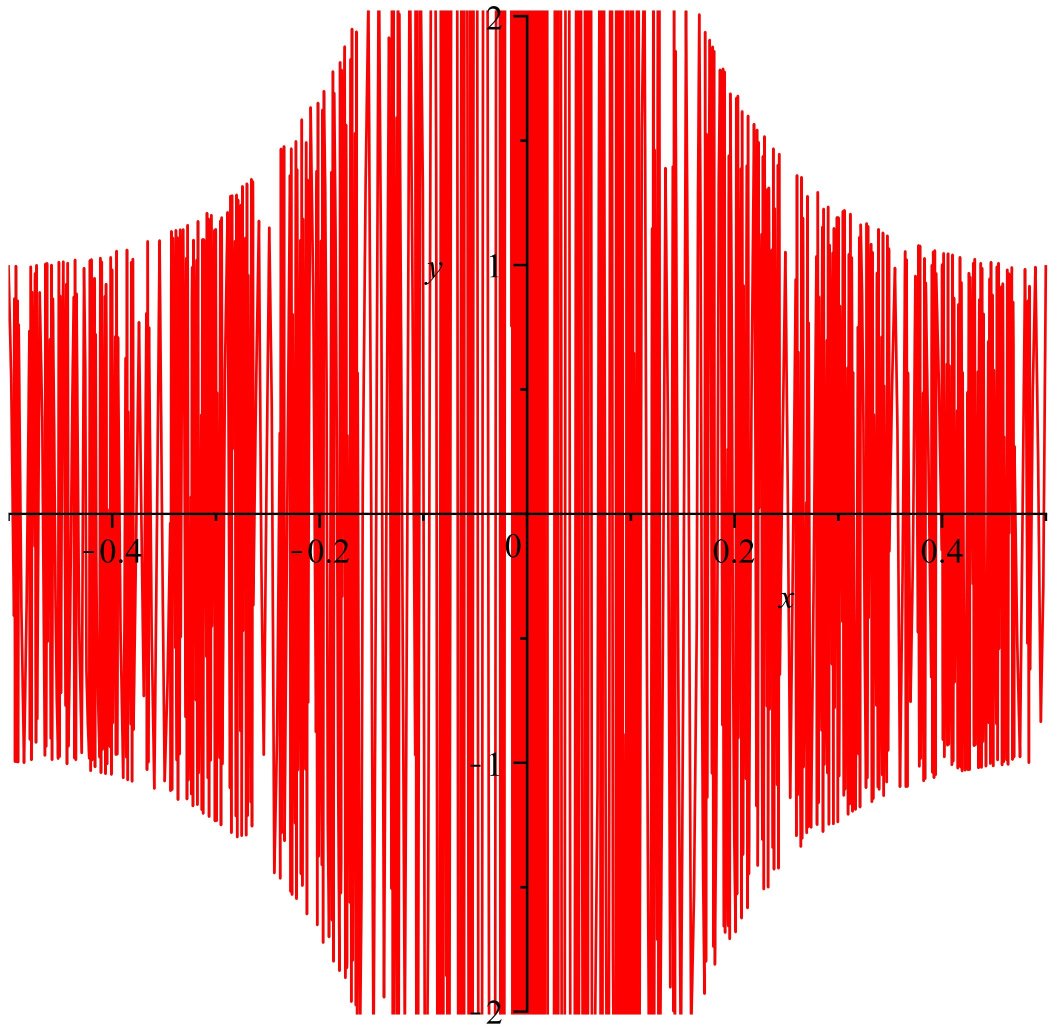

```
> plot(sin(2*Pi*(2*500+1)*x/2)/sin(2*Pi*x/2),x=-0.5..0.5,y=-2..2);
```




```
> plot(sin(2*Pi*(2*600+1)*x/2)/sin(2*Pi*x/2),x=-0.5..0.5,y=-2..2);
```




```
> plot(sin(2*Pi*(2*700+1)*x/2)/sin(2*Pi*x/2),x=-0.5..0.5,y=-2..2);
```



(Note that apparent density of graph is just an artifact of whether number of sample points Maple takes between -0.5 and 0.5 "resonates" with N.)

In fact, for any fixed value of x, D_N(x) diverges as N goes to infinity, for reasons similar to those found in Problem 1.1.2 (!), which actually deals with a +/- variant on D_N(x).