In [1]:
```python
import numpy as np
import pandas as pd
%matplotlib inline
from matplotlib import pyplot as plt
from scipy import fftpack
```

In [2]:
```python
df2 = pd.read_csv("outOrder2.cvs")
df3 = pd.read_csv("outOrder3.cvs")
df4 = pd.read_csv("outOrder4.cvs")
df5 = pd.read_csv("outOrder5.cvs")
```

In [3]:
```python
np.pi/2
```

Out[3]: 1.5707963267948966

In [4]:
```python
df2
```

Out[4]:

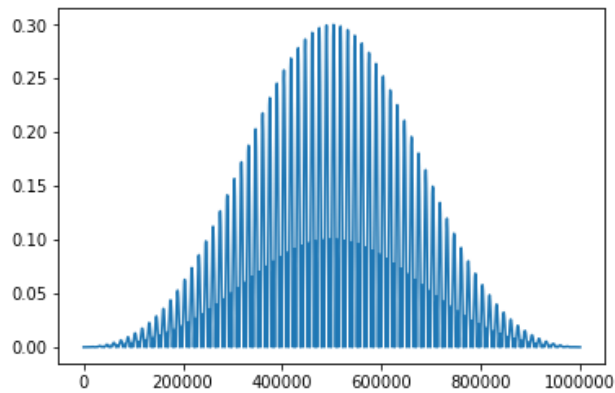|	input	output
0	0.100000	1
1	0.100088	1
2	0.100176	-1
3	0.100264	1
4	0.100352	-1
...	...	...
999995	0.134788	1
999996	0.134875	-1
999997	0.134961	1
999998	0.135048	-1
999999	0.135134	1

1000000 rows × 2 columns

In [5]:
```python
def plotSpectr(df,legend):
    power = np.square(np.abs(fftpack.fft(np.blackman(df.size/2)))).sum()
    line, = plt.semilogx(20*np.log10(np.abs(fftpack.fft(df.output*np.bla
ckman(df.size/2))))-10*np.log10(power))
    plt.ylabel('db')
    plt.xlabel('Hz, if obeservation time is 1 sec')
    plt.title('Sigma-delta spectr')
    line.set_label(legend)
    plt.legend()
```
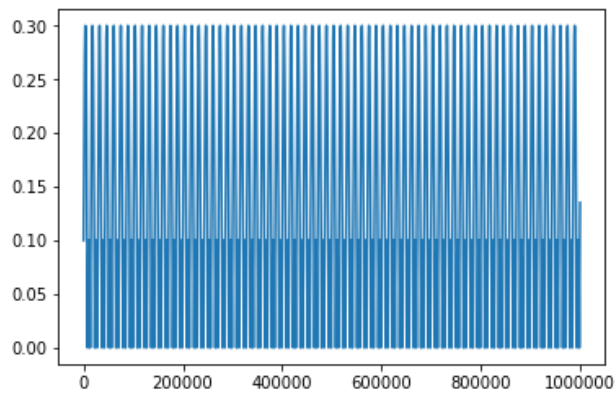
In [6]:
```python
df2.size/2
```

Out[6]: 1000000.0

In [7]: `plt.plot((np.abs((df2.input*np.blackman(1000000)))))`

Out[7]: `[<matplotlib.lines.Line2D at 0x7f7a86ca5be0>]`

In [8]: `plt.plot((np.abs((df2.input))))`

Out[8]: `[<matplotlib.lines.Line2D at 0x7f7a86c38fd0>]`

In [9]:
```
plotSpectr(df2,'2 order')
plotSpectr(df3,'3 order')
plotSpectr(df4,'4 order')
plotSpectr(df5,'5 order')
```