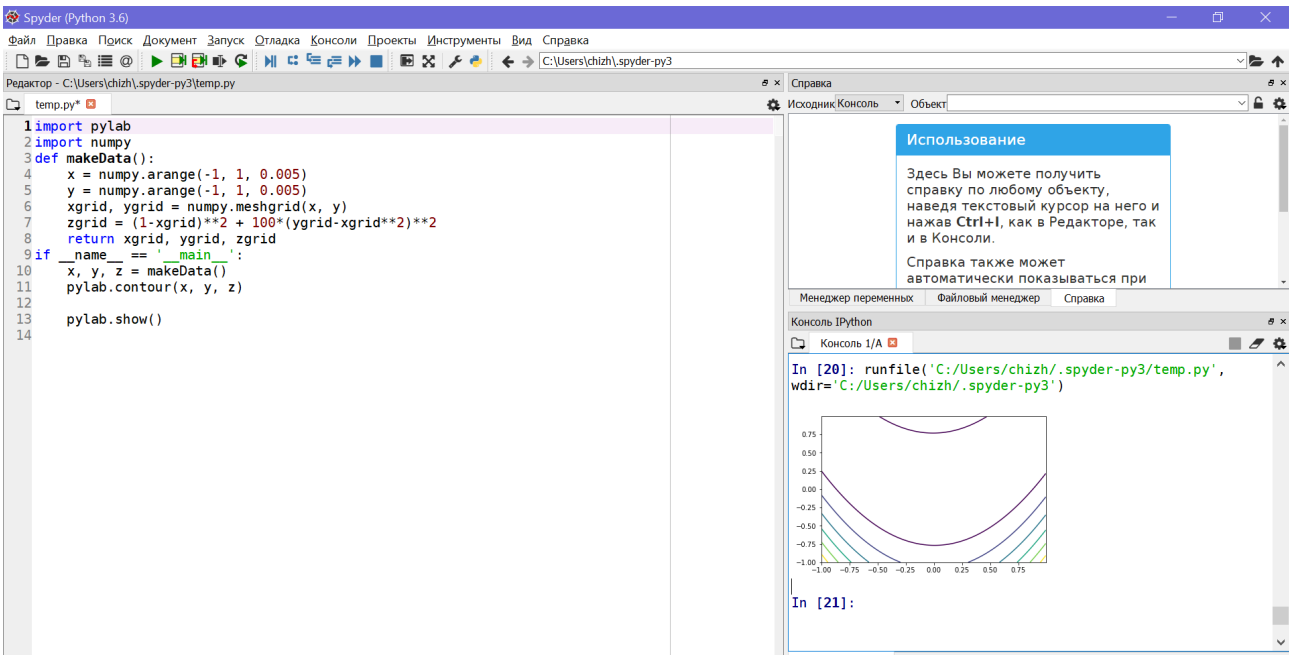
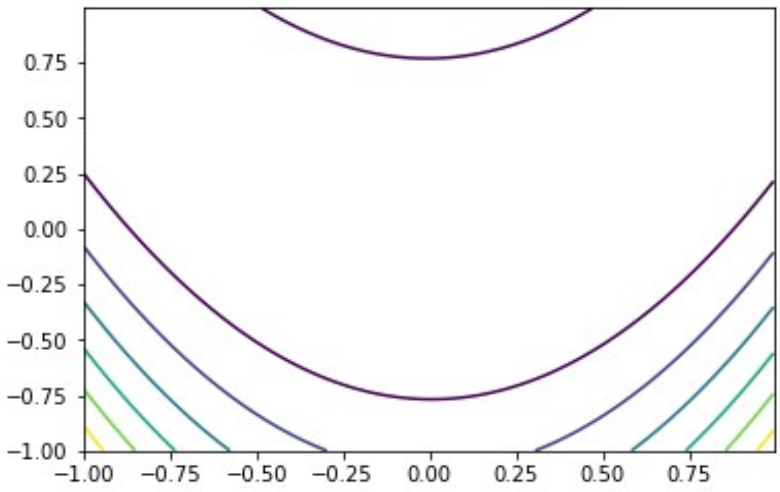
Функция Розенброка F(x,y)=100(y-x^2)^2 + (1-x)^2

```
import pylab
import numpy
def makeData():
    x = numpy.arange(-1, 1, 0.005)
    y = numpy.arange(-1, 1, 0.005)
    xgrid, ygrid = numpy.meshgrid(x, y)
    zgrid = (1-xgrid)**2 + 100*(ygrid-xgrid**2)**2
    return xgrid, ygrid, zgrid
if __name__ == '__main__':
    x, y, z = makeData()
    pylab.contour(x, y, z)

    pylab.show()
```



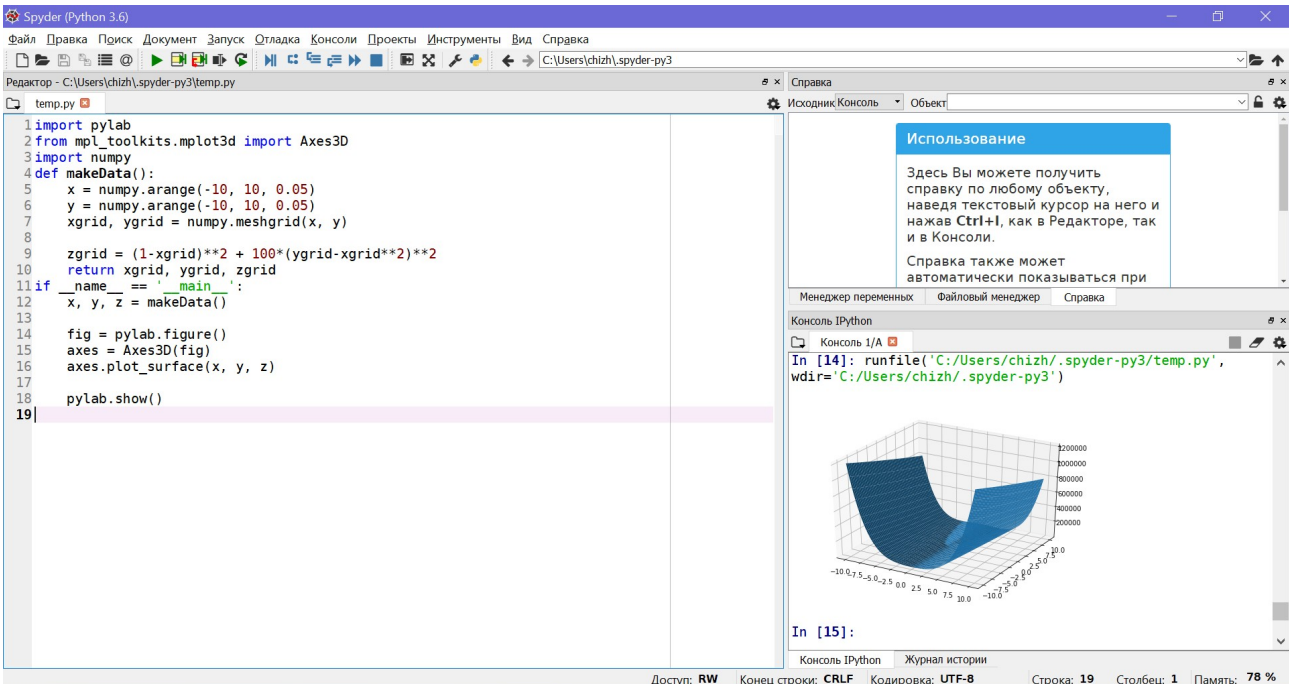


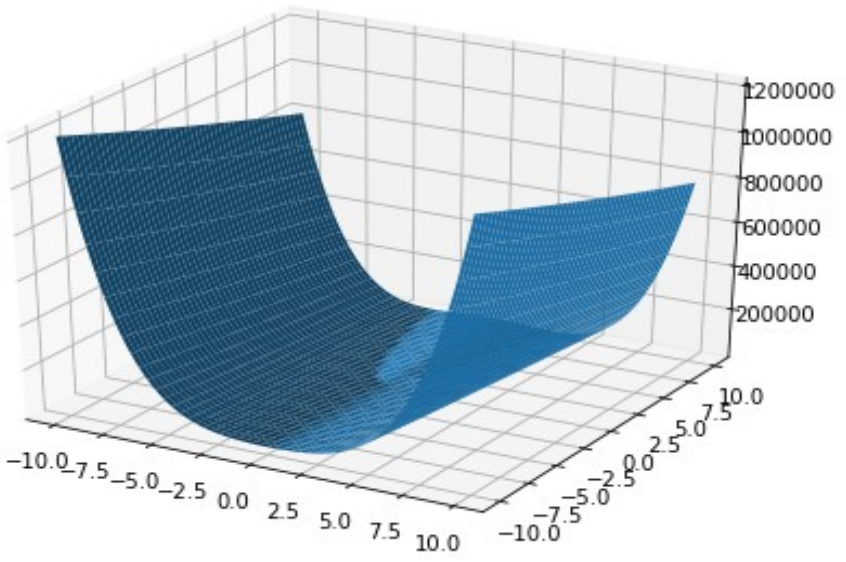
```
import pylab
from mpl_toolkits.mplot3d import Axes3D
import numpy
def makeData():
    x = numpy.arange(-10, 10, 0.05)
    y = numpy.arange(-10, 10, 0.05)
    xgrid, ygrid = numpy.meshgrid(x, y)

    zgrid = (1-xgrid)**2 + 100*(ygrid-xgrid**2)**2
    return xgrid, ygrid, zgrid
if __name__ == '__main__':
    x, y, z = makeData()

    fig = pylab.figure()
    axes = Axes3D(fig)
    axes.plot_surface(x, y, z)

    pylab.show()
```





```
from scipy import optimize
import numpy

def f(x):
    return (1-x[0])**2 + 100*(x[1]-x[0]**2)**2
result = optimize.brute(f,((-5, 5),(-5, 5)))
print (result)
```

Ответ: [1.00001563 1.00003185]