Assignment 2 1 - Program

```
import numpy

#description of script printed to screen
print 'Solving equation of form:'
print 'a x^2 + b x + c = 0'
print 'for x'
#read in data for coefficients; raw_input reads from command line; its argument is the prompt displayed to the user; it returns what the user entered
a = float(raw_input('Input value for coefficient `a`: '))
b = float(raw_input('Input value for coefficient `b`: '))
c = float(raw_input('Input value for coefficient `c`: '))

#calculate discriminant of quadratic formula
discrim = b**2 - 4.0 * a * c

#calculate the two values for x; unlike the previous assignment, use two element `list` (similar to an array)
x = [(-b + numpy.sqrt(discrim))/(2.0*a),(-b - numpy.sqrt(discrim))/(2.0*a)]

#output everything
print 'for coefficients of:'
print 'a=',a
print 'b=',b
print 'c=',c
print 'x values of:'
print x[0] #python lists/arrays index from zero, not one
print 'and'
print x[1]
```

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#output everything
print 'for coefficients of:'
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```
24 print x[0] #python lists/arrays index from zero, not one
25 print 'and'
26 print x[1]
27
28 #open file in 'w'rite mode
29 fout = open('assign_2_2.out','w')
30 #each file.write statement takes a single string argument; new lines are not
      appended automatically, and must be written in as '\n'
31 fout.write('for coefficients of:\n')
32 fout.write('a='+str(a)+'\n')
33 fout.write('b='+str(b)+'\n')
34 fout.write('c='+str(c)+'\n')
35 fout.write('x values of:\n')
36 fout.write(str(x[0])+'\n') #python lists/arrays index from zero, not one
37 fout.write('and\n')
38 fout.write(str(x[1])+'\n')
39 #close the file
40 fout.close()
```

Assignment 2 2 - Output

```
1 for coefficients of:
2 a=4.0
3 b=3.0
4 c=-1.0
5 x values of:
6 0.25
7 and
8 -1.0
```