March 31

```python
#!/usr/bin/env python
# -*- coding: utf-8 -*-

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# Date    : Mar 26, 2016

# Polynomial : p[0] * x**n + p[1] * x**(n-1) + ... + p[n-1]*x + p[n]
# Coeffs     : p0,p1,p2,...pn

# Program : solve x*3 -50x^2 + 185x - 924.5 = 0

# Imports
import numpy as np

# scriptE = 0
# To solve x^2 - 9.245 x + 18.5 = 0
coeff = [1, -9.245, 18.5]
print("for scriptE = 0")
print(np.roots(coeff))


# scriptE = -0.02
# To solve scriptE * x^3 + x^2 -9.245x + 18.49 = 0
coeff = [-0.03, 1, -9.245, 18.49]
print("\nfor scriptE = -0.02")
print(np.roots(coeff))


# scriptE = 0.03
coeff = [0.03, 1, -9.245, 18.49]
print("\nfor scriptE = 0.03")
print(np.roots(coeff))

# scriptE = 0.025
coeff = [0.025, 1, -9.245, 18.49]
print("\nfor scriptE = 0.025")
print(np.roots(coeff))

# scriptE = 0.045
coeff = [0.045, 1, -9.245, 18.49]
print("\nfor scriptE = 0.045")
print(np.roots(coeff))
```

```
#for scriptE = 0
#[ 6.31587127  2.92912873]

#for scriptE = -0.02
#[ 18.41942521  12.16281345   2.75109468]

#for scriptE = 0.03
#[-41.18015683   4.5764082    3.2704153 ]

#for scriptE = 0.025
#[-48.02144629   4.83803695   3.18340934]

#for scriptE = 0.045
#[-29.62518188+0.j          3.70147983+0.41064467j   3.70147983-0.41064467j]
```