Homework #3

Implement an EquityOption class, you need to decide which of the following should be instance attributes and which the class attributes:

```
CallFlag
Spot
Strike
Maturity
Vol
RiskfreeRate
DividendYield
```

1. Constructor:
   a.Write a constructor to assign instance attributes appropriately
   b. Use *args or **kwargs in your constructor to assign the class attributes if provided
2. Use class methods to assign class attributes with provided values
3. In case you need to write pure math functions, you may want to designate them as static methods
4. Decide whether to write Black-Scholes prices as instance or class method and program accordingly
5. Overload the string representation of the class so instances are displayed with essential options details
6. Overload the `__imul__(self, stock_split)` function to accomodate the effect of stock split on Equity options
7. Implement Black-Scholes formula for the following Greeks of the Equity Option:
   a. Delta
   b. Gamma
   c. Vega
   d. Theta
8. Implement implied volatility function for a given option market price, using
   a. Biset Method

b. Newton-Raphson Method

The implied volatility should be within a given precision, e.g. 10^{-4}

Test your implementation using a few test cases.

Submit your source code as well as the result of your test cases online to receive credit for this homework!

Have fun!