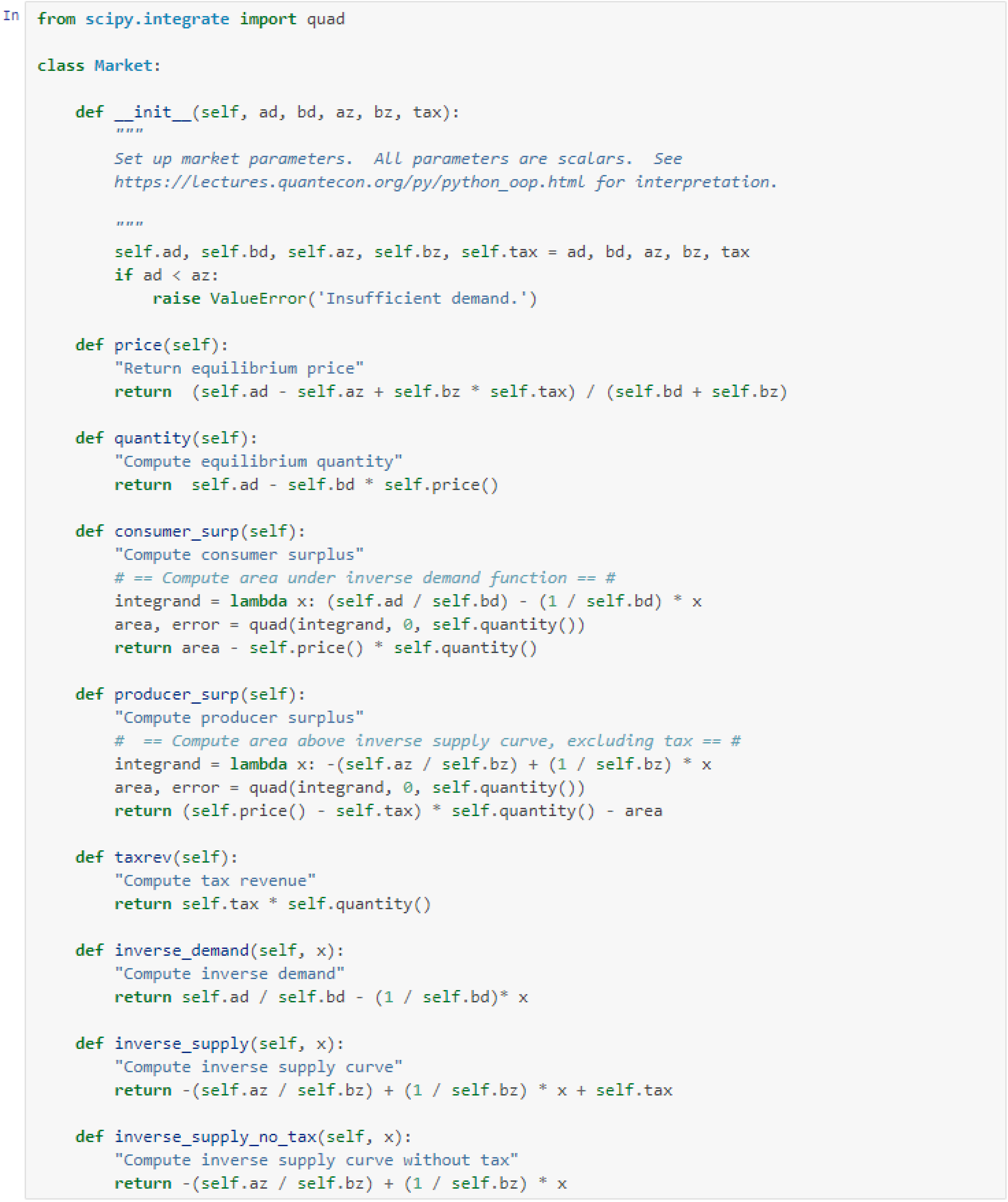
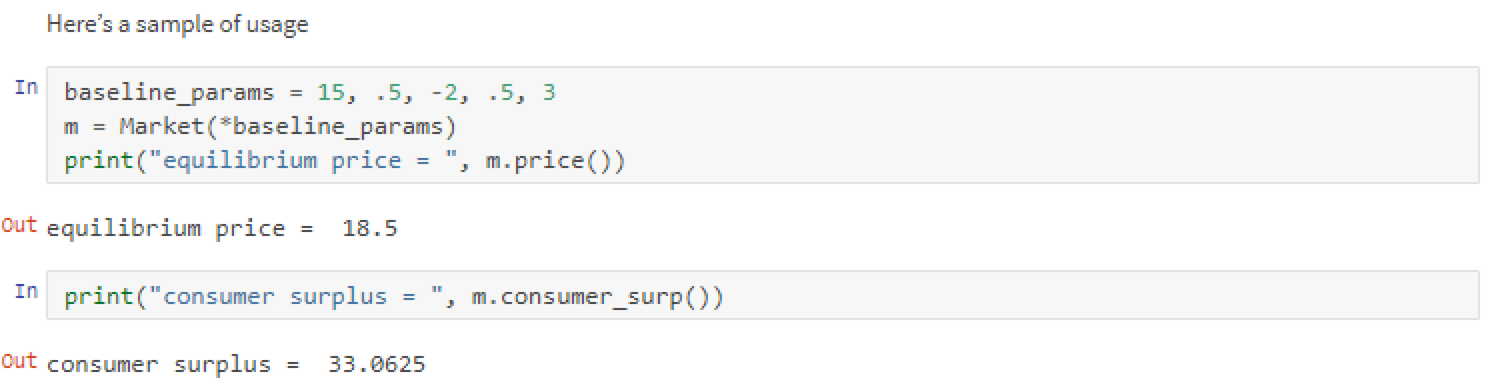


```python
from scipy.integrate import quad

class Market:

    def __init__(self, ad, bd, az, bz, tax):
        """
        Set up market parameters.  All parameters are scalars.  See
        https://lectures.quantecon.org/py/python_oop.html for interpretation.

        """
        self.ad, self.bd, self.az, self.bz, self.tax = ad, bd, az, bz, tax
        if ad < az:
            raise ValueError('Insufficient demand.')

    def price(self):
        "Return equilibrium price"
        return  (self.ad - self.az + self.bz * self.tax) / (self.bd + self.bz)

    def quantity(self):
        "Compute equilibrium quantity"
        return  self.ad - self.bd * self.price()

    def consumer_surp(self):
        "Compute consumer surplus"
        # == Compute area under inverse demand function == #
        integrand = lambda x: (self.ad / self.bd) - (1 / self.bd) * x
        area, error = quad(integrand, 0, self.quantity())
        return area - self.price() * self.quantity()

    def producer_surp(self):
        "Compute producer surplus"
        #  == Compute area above inverse supply curve, excluding tax == #
        integrand = lambda x: -(self.az / self.bz) + (1 / self.bz) * x
        area, error = quad(integrand, 0, self.quantity())
        return (self.price() - self.tax) * self.quantity() - area

    def taxrev(self):
        "Compute tax revenue"
        return self.tax * self.quantity()

    def inverse_demand(self, x):
        "Compute inverse demand"
        return self.ad / self.bd - (1 / self.bd)* x

    def inverse_supply(self, x):
        "Compute inverse supply curve"
        return -(self.az / self.bz) + (1 / self.bz) * x + self.tax

    def inverse_supply_no_tax(self, x):
        "Compute inverse supply curve without tax"
        return -(self.az / self.bz) + (1 / self.bz) * x
```



Here's a sample of usage

```
baseline_params = 15, .5, -2, .5, 3
m = Market(*baseline_params)
print("equilibrium price = ", m.price())
```

```
equilibrium price =  18.5
```

```
print("consumer surplus = ", m.consumer_surp())
```

```
consumer surplus =  33.0625
```