Assignment 1

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```
In [1]: import pandas as pd
        import matplotlib.pyplot as plt
        import seaborn as sns
        import numpy as np
```

1.1 Part 1: Table of values

```
In [2]: Qd = np.arange(100,-1,-12.5)
        Qs = np.arange(10,100,10)
        P = [0,2.5,5,7.5,10,12.5,15,17.5,20]
        df = pd.DataFrame([[P[i],Qd[i],Qs[i]] for i in range(9)],
                columns=['Price', 'Quantity Demanded', 'Quantity Supplied'])
        print(df)
```

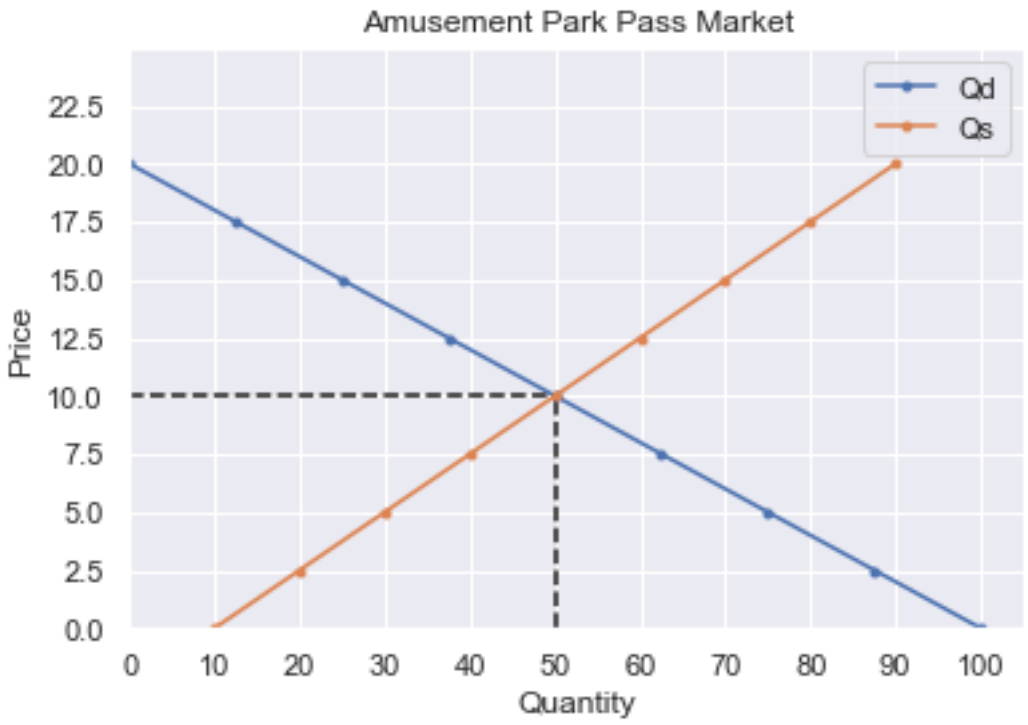
```
   Price  Quantity Demanded  Quantity Supplied
0    0.0              100.0                 10
1    2.5               87.5                 20
2    5.0               75.0                 30
3    7.5               62.5                 40
4   10.0               50.0                 50
5   12.5               37.5                 60
6   15.0               25.0                 70
7   17.5               12.5                 80
8   20.0                0.0                 90
```

1.2 Part 2: Graph quantities supplied and demanded

```
In [3]: sns.set()
        _ = plt.plot(df['Quantity Demanded'], df['Price'], marker='.')
        _ = plt.plot(df['Quantity Supplied'], df['Price'], marker='.')
        _ = plt.xlim(0,105)
        _ = plt.ylim(0,25)
        _ = plt.xticks(np.arange(0,101,10))
        _ = plt.yticks(np.arange(0,25,2.5))
```

```
_ = plt.hlines(10,0,50,linestyles='dashed')
_ = plt.vlines(50,0,10,linestyles='dashed')
_ = plt.xlabel('Quantity')
_ = plt.ylabel('Price')
_ = plt.title('Amusement Park Pass Market')
_ = plt.legend(["Qd", "Qs"])

plt.show()
```



1.2.1 Equilibrium

Price: $10

Quantity: 50

1.3 Part 3: Equations

1.3.1 Quantity Demanded

Qd = 100 - 5P

1.3.2 Quantity Supplied

Qs = 10 + 4P