Problem 1

```
In [ ]:  import time
```

```
In [ ]:  lambda_f = lambda x: x**3 if x >= 0 else 0
```

```
In [ ]:  def def_f(x):
             if x >= 0:
                 return x**3
             else:
                 return 0
```

```
In [ ]:  x_vals = range(-10000, 10000+1)
```

```
In [ ]:  start_lambda = time.time()
         results_lambda = [lambda_f(x) for x in x_vals]
         end_lambda = time.time()
```

```
In [ ]:  start_def = time.time()
         results_def = [def_f(x) for x in x_vals]
         end_def = time.time()
```

```
In [ ]:  print(f"Lambda Time: {end_lambda - start_lambda} s ")
         print(f"Def Time: {end_def - start_def} s")
```

```
Lambda Time: 0.0029990673065185547 s
Def Time: 0.002998828887939453 s
```

Problem 2

In this section, I first show a, then show b, the modify b, then show a to show it hasn't been
modified. I do this for both methods

```
In [ ]:  a = [1, 2, 3, 4, 5]
         print(a)
```

```
[1, 2, 3, 4, 5]
```

Method 1

```
In [ ]:  b = []
         for val in a:
             b.append(val)
```

```
In [ ]:  print("b:")
         print(b)
         b[0] = 7
         print("new b:")
         print(b)
```

```
print("a")
print(a)
```

```
b:
[1, 2, 3, 4, 5]
new b:
[7, 2, 3, 4, 5]
a
[1, 2, 3, 4, 5]
```

Method 2

In [ ]:
```
b = list(a)
```

In [ ]:
```
print("b:")
print(b)
b[0] = 7
print("new b:")
print(b)
print("a")
print(a)
```

```
b:
[1, 2, 3, 4, 5]
new b:
[7, 2, 3, 4, 5]
a
[1, 2, 3, 4, 5]
```

Problem 3

In [ ]:
```
import csv
```

In [ ]:
```
stock_data = {}

with open('pbm3.csv', mode='r') as file:

    csv_reader = csv.reader(file)

    next(csv_reader) # skip first line

    for row in csv_reader:

        symbol = row[0]
        m_cap = row[1]

        stock_data[symbol] = m_cap
```

In [ ]:
```
print(stock_data)
```

```
{'ACN': '1.97929E+11', 'ACNB': '318953126', 'ACNT': '104183544', 'ACON': '2302722',
'ACONW': '311733'}
```