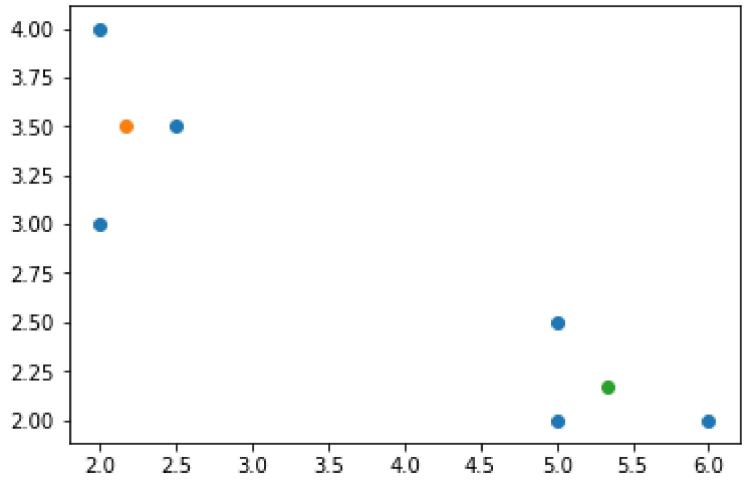
In [7]:
```
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
X = np.array([2,2,5,6,5,2.5])
Y = np.array([4,3,2,2,2.5,3.5])

c1 = (2, 4)
c2 = (5, 2)
c_1 = []
c_2 = []
```

In [8]:
```
def distance(c1, c2, x, y):
    for i in range(len(x)):
        m = ((c1[0] - x[i])**2 + ( c1[1] - y[i])**2)**.5
        n = ((c2[0] - x[i])**2 + ( c2[1] - y[i])**2)**.5
        if m < n:
            c_1.append([x[i], y[i]])
            c1 = (np.mean([s[0] for s in c_1]),
                  np.mean([s[1] for s in c_1]))
            print(c1)
        else:
            c_2.append([x[i], y[i]])
            c2 = (np.mean([s[0] for s in c_2]),
                  np.mean([s[1] for s in c_2]))
            print(c2)
    return c1, c2
```

In [3]:
```
c11, c22 = distance(c1, c2, X, Y)
```

```
(2.0, 4.0)
(2.0, 3.5)
(5.0, 2.0)
(5.5, 2.0)
(5.333333333333333, 2.1666666666666665)
(2.1666666666666665, 3.5)
```

In [9]:
```
plt.scatter(X, Y)
plt.scatter(c11[0], c11[1])
plt.scatter(c22[0], c22[1])
plt.show()
```



In [ ]: