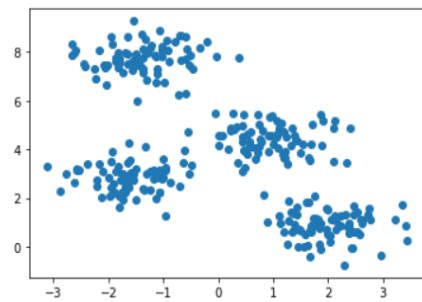K-means Clustering algorithm Output:

```
In [5]:  ▶  import numpy as np
            import pandas as pd
            from matplotlib import pyplot as plt
            from sklearn.datasets.samples_generator import make_blobs
            from sklearn.cluster import KMeans
```

```
In [2]:  ▶  X, y = make_blobs(n_samples=300, centers=4, cluster_std=0.60, random_state=0)
            plt.scatter(X[:,0], X[:,1])
```

Out[2]: <matplotlib.collections.PathCollection at 0x272f10e17c0>


```
In [3]:  ▶  wcss = []
            for i in range(1, 11):
                kmeans = KMeans(n_clusters=i, init='k-means++', max_iter=300, n_init=10, random_state=0)
                kmeans.fit(X)
                wcss.append(kmeans.inertia_)
            plt.plot(range(1, 11), wcss)
            plt.title('Elbow Method')
            plt.xlabel('Number of clusters')
            plt.ylabel('WCSS')
            plt.show()
```
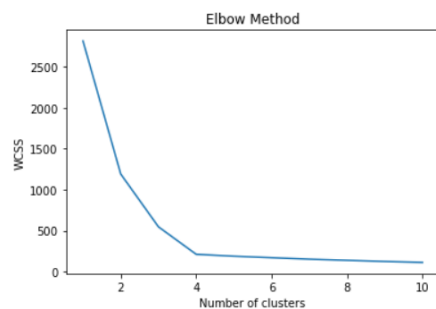
```
In [4]:  ▶| kmeans = KMeans(n_clusters=4, init='k-means++', max_iter=300, n_init=10, random_state=0)
          pred_y = kmeans.fit_predict(X)
          plt.scatter(X[:,0], X[:,1])
          plt.scatter(kmeans.cluster_centers_[:, 0], kmeans.cluster_centers_[:, 1], s=300, c='red')
          plt.show()
```