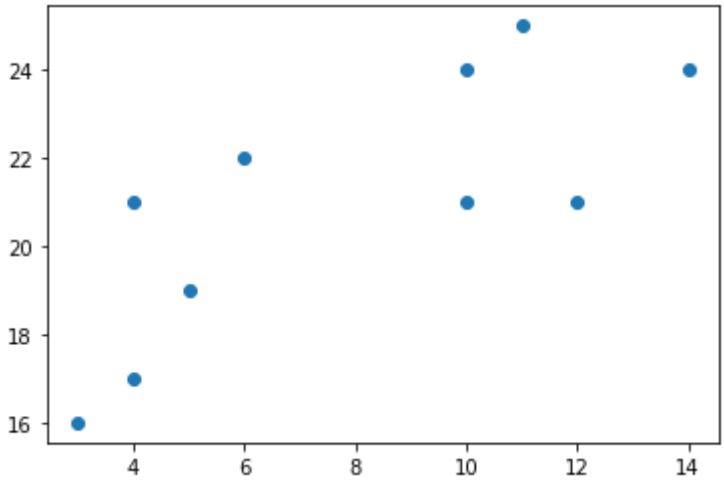
In [14]:
```
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings('ignore')

x = [4, 5, 10, 4, 3, 11, 14 , 6, 10, 12]
y = [21, 19, 24, 17, 16, 25, 24, 22, 21, 21]

plt.scatter(x, y)
plt.show()
```

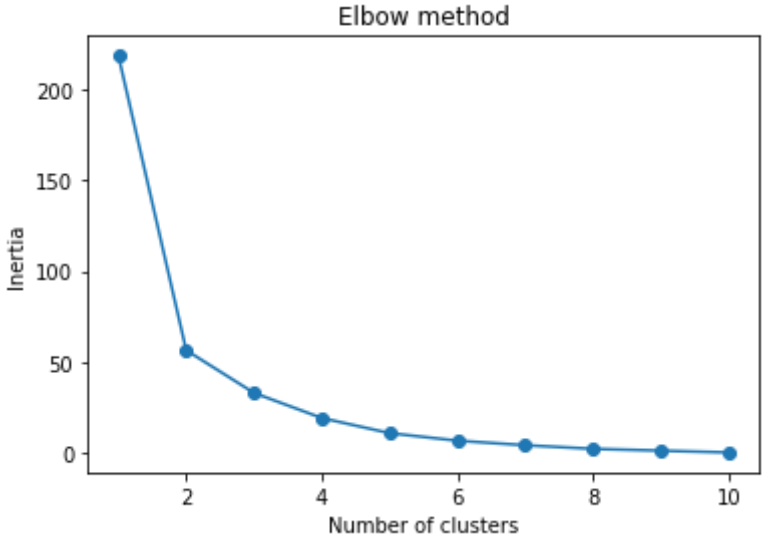


In [15]:
```
from sklearn.cluster import KMeans

data = list(zip(x, y))
inertias = []

for i in range(1,11):
    kmeans = KMeans(n_clusters=i)
    kmeans.fit(data)
    inertias.append(kmeans.inertia_)

plt.plot(range(1,11), inertias, marker='o')
plt.title('Elbow method')
plt.xlabel('Number of clusters')
plt.ylabel('Inertia')
plt.show()
```



In [12]:
```
kmeans = KMeans(n_clusters=2)
kmeans.fit(data)
```

```
print(kmeans.labels_)
```

```
[1 1 0 1 1 0 0 1 0 0]
```

In [10]:
```
print(kmeans.cluster_centers_)
```

```
[[ 4.4 19. ]
 [11.4 23. ]]
```

In [11]:
```
plt.scatter(x, y, c=kmeans.labels_)
plt.show()
```