In [2]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [3]:
```
from sklearn.datasets import make_blobs
```

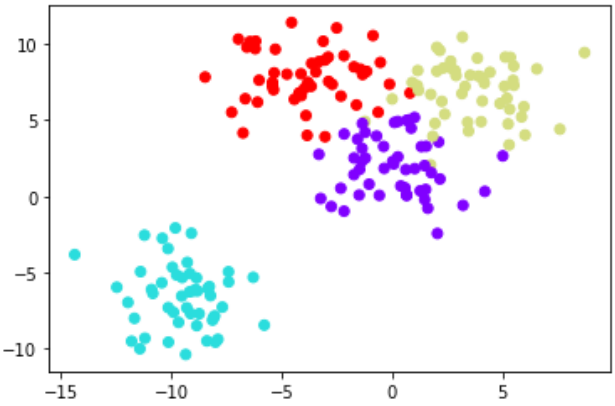
In [7]:
```
data = make_blobs(n_samples = 200, n_features = 2, centers = 4,
                  cluster_std = 1.8, random_state = 101)
```

In [9]:
```
data[0].shape
```

Out[9]:
```
(200, 2)
```

In [15]:
```
plt.scatter(data[0][:,0],data[0][:,1],c=data[1],cmap='rainbow')
```

Out[15]:
```
<matplotlib.collections.PathCollection at 0x1a1aa71ba8>
```



In [16]:
```
from sklearn.cluster import KMeans
```

In [17]:
```
kmeans = KMeans(n_clusters=4)
```

In [18]:
```
kmeans.fit(data[0])
```

Out[18]:
```
KMeans(algorithm='auto', copy_x=True, init='k-means++', max_iter=300,
       n_clusters=4, n_init=10, n_jobs=None, precompute_distances='auto',
       random_state=None, tol=0.0001, verbose=0)
```

In [19]:
```
kmeans.cluster_centers_
```

Out[19]:
```
array([[-0.0123077 ,  2.13407664],
       [-9.46941837, -6.56081545],
       [-4.13591321,  7.95389851],
       [ 3.71749226,  7.01388735]])
```

In [21]:
```
# will return most likely labels(KMeans)
kmeans.labels_
```

Out[21]:
```
array([2, 3, 0, 3, 3, 1, 3, 0, 3, 0, 2, 0, 3, 3, 2, 0, 3, 0, 1, 2, 1, 0,
       0, 1, 2, 1, 1, 0, 3, 3, 2, 1, 3, 0, 0, 2, 1, 1, 1, 0, 1, 2, 2, 2,
       0, 3, 2, 0, 1, 0, 0, 2, 3, 0, 1, 2, 0, 0, 2, 3, 1, 3, 1, 2, 3, 0,
       1, 3, 3, 1, 3, 0, 1, 0, 1, 3, 3, 0, 2, 0, 0, 1, 3, 1, 0, 0, 0, 2,
       0, 1, 1, 1, 1, 0, 0, 1, 3, 2, 1, 3, 0, 1, 0, 0, 3, 0, 1, 3, 1, 1,
       3, 2, 2, 3, 1, 3, 2, 2, 3, 2, 0, 2, 0, 2, 0, 3, 2, 0, 1, 2, 2, 2,
       0, 1, 1, 2, 3, 2, 3, 0, 1, 3, 1, 2, 2, 3, 0, 1, 2, 2, 2, 2, 0, 3,
       0, 2, 3, 3, 3, 0, 3, 0, 0, 2, 1, 2, 0, 3, 2, 0, 3, 0, 2, 3, 0, 2,
       3, 3, 1, 3, 2, 1, 1, 2, 1, 1, 1, 1, 1, 0, 1, 3, 3, 2, 1, 0, 3, 3,
       1, 0], dtype=int32)
```

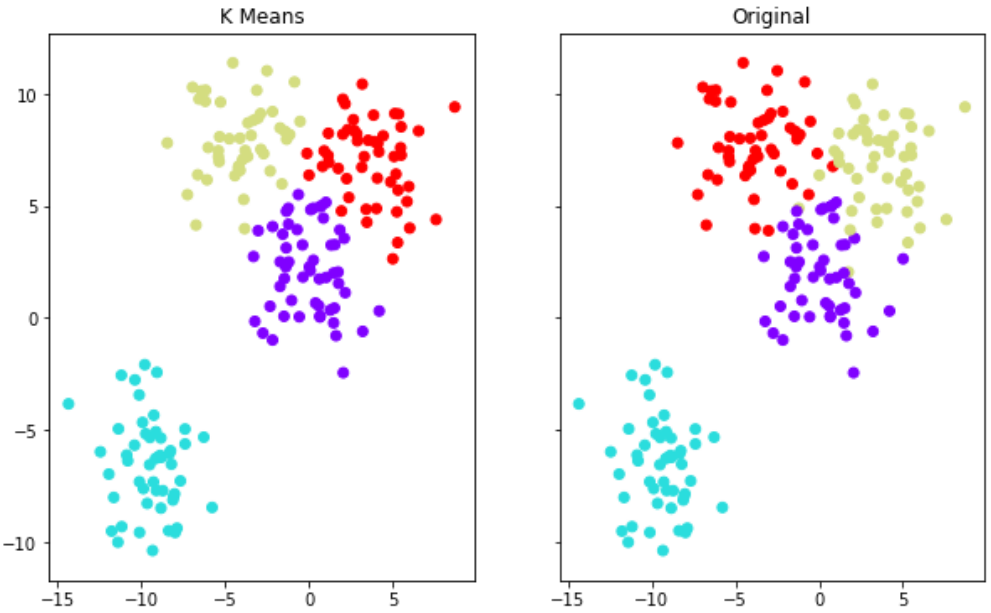
In [22]:
```
# now compare plots to see how acurate

fig, (ax1,ax2) = plt.subplots(1,2, sharey=True, figsize=(10,6))

ax1.set_title('K Means')
ax1.scatter(data[0][:,0],data[0][:,1], c=kmeans.labels_,cmap='rainbow')

ax2.set_title('Original')
ax2.scatter(data[0][:,0],data[0][:,1], c=data[1],cmap='rainbow')
```

Out[22]:
```
<matplotlib.collections.PathCollection at 0x1a1bac7e48>
```



In [ ]:
```
```