

Task 2

a.

```
Q = [2; 1; 6; 4; 2]
```

```
Q = 5x1
    2
    1
    6
    4
    2
```

```
A = [1; 2; 3; 4; 1]
```

```
A = 5x1
    1
    2
    3
    4
    1
```

```
B = [3; 1; 4; 1; 5]
```

```
B = 5x1
    3
    1
    4
    1
    5
```

```
%dist_E = sqrt((x - x').^2 + (y - y').^2)
E_distance_A = sqrt(sum((Q-A).^2))
```

```
E_distance_A = 3.4641
```

```
E_distance_B = sqrt(sum((Q-B).^2))
```

```
E_distance_B = 4.7958
```

```
cosSim_B = sum(Q.*B)/sqrt(sum(Q.^2)*sum(B.^2))
```

```
cosSim_B = 0.7990
```

```
cosSim_A = sum(Q.*A)/sqrt(sum(Q.^2)*sum(A.^2))
```

```
cosSim_A = 0.9198
```

b.

According to the Euclidean distances and Cosine similarities Feature vector A (Image from dataset) is more similar. Cosine similarity close to 1 and shorter euclidean distance.