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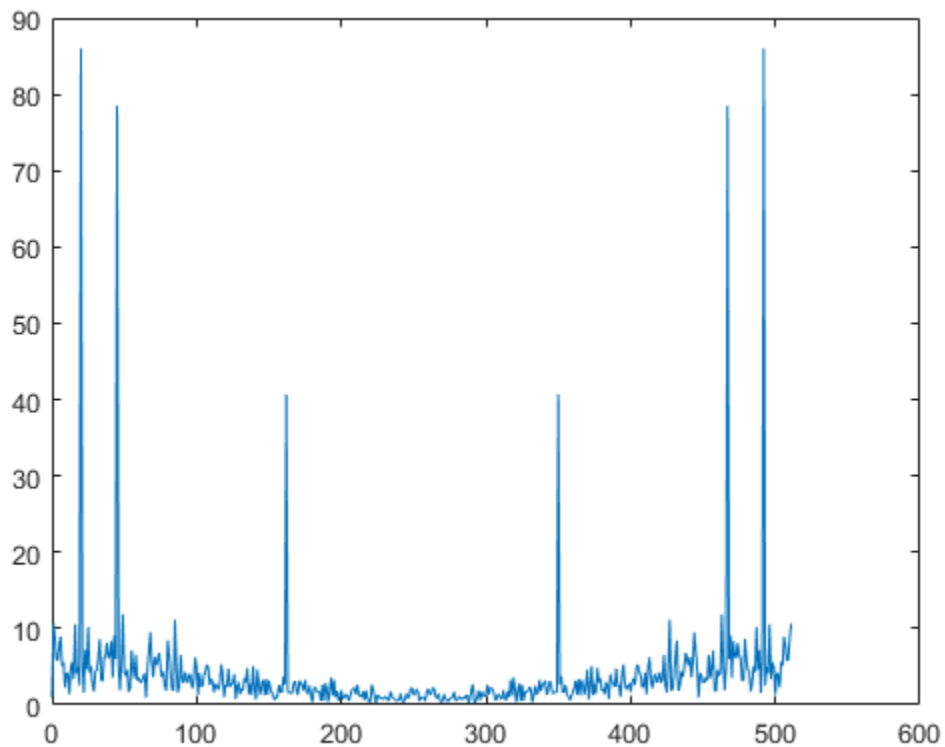
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```
[xn, Fs] = audioread('hw5audio.wav');
```

## Part a

### Part i

```
k = 0:511;
xn_mag = abs(fft(xn, 512));
figure();
title("Magnitude of X[k]");
plot(k, xn_mag);
```



---

## Part ii

```
a = find(xn_mag > 30)
```

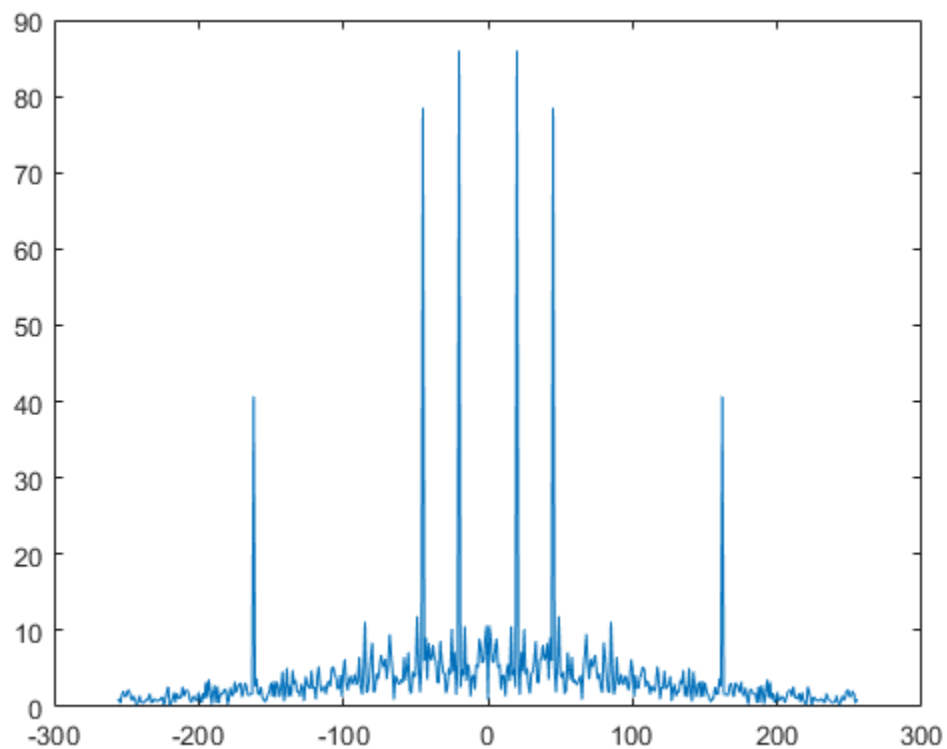
```
a =
```

```
21  
46  
163  
351  
468  
493
```

## Part b

## Part i

```
k = -256:255;  
xn_shift = fftshift(abs(fft(xn, 512)));  
  
figure();  
title("Magnitude of X[k]");  
plot(k, xn_shift);
```



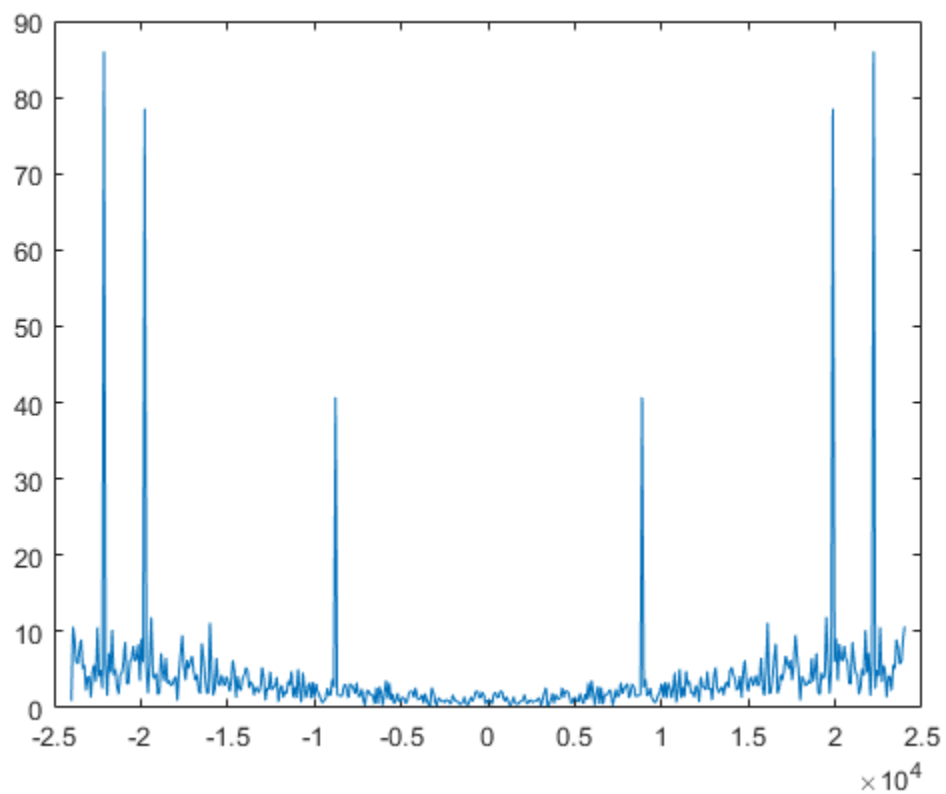
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## Part ii

**There are six dominant frequency.**

## Part iii

```
w_axes = linspace(-Fs/2, Fs/2, 512);  
figure();  
title("Magnitude of X[k]");  
plot(w_axes, xn_mag);
```



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