

Assignment 1

Vladislav Serafimov 509761

1.

```
Fs = 200; %Hz  
fn = 40; %Hz  
phi = 2*pi*fn/Fs;  
z1 = cos(phi) + 1i*sin(phi)
```

```
z1 = 0.3090 + 0.9511i
```

```
z2 = cos(phi) - 1i*sin(phi)
```

```
z2 = 0.3090 - 0.9511i
```

2.

```
Fs = 200; %Hz  
fn = 50; %Hz  
phi = 2*pi*fn/Fs;  
z1 = cos(phi) + 1i*sin(phi)
```

```
z1 = 0.0000 + 1.0000i
```

```
z2 = cos(phi) - 1i*sin(phi)
```

```
z2 = 0.0000 - 1.0000i
```

3.

In the filter designer it is impossible to generate a filter that attenuates only 1 frequency.

