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## Homework problem 3 a,b,c.

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```
clear;  
clc;  
close all;
```

## Functions

```
x = linspace(-1,1,50);  
  
y1 = (sin(2*pi*x))./(1+x.^2);  
  
y2 = 1./(1+(x.^2));  
  
y3 = (-1)./(1+x.^2);
```

## Plotting functions

```
plot(x,y1, 'b-'); % The following plots the graph based on the  
    conditions set by x  
hold on  
plot(x,y2, 'r--');  
hold on  
plot(x,y3, 'g--');
```

## Plot labeling

```
legend({'y1', 'y2', 'y3'}, 'Location', 'southwest') % legend and  
    location  
title('The functions y1, y2, and y3') % title of graph  
xlabel('-1 <= x <= 1') % x axis label  
ylabel('Values for y1, y2, y3') % y axis label
```

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