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```
clear
close all
```

Problem 1

```
v1A = [1 2 3 4 5]
v1B = [3 -1 2].'
v1C = 0:0.1:10
v1D = 10:-0.1:0
```

```
v1A =

     1     2     3     4     5


v1B =

     3
    -1
     2


v1C =

  Columns 1 through 7

         0    0.1000    0.2000    0.3000    0.4000    0.5000    0.6000

  Columns 8 through 14

    0.7000    0.8000    0.9000    1.0000    1.1000    1.2000    1.3000

  Columns 15 through 21

    1.4000    1.5000    1.6000    1.7000    1.8000    1.9000    2.0000

  Columns 22 through 28
```

```
    2.1000    2.2000    2.3000    2.4000    2.5000    2.6000    2.7000

  Columns 29 through 35

    2.8000    2.9000    3.0000    3.1000    3.2000    3.3000    3.4000

  Columns 36 through 42

    3.5000    3.6000    3.7000    3.8000    3.9000    4.0000    4.1000

  Columns 43 through 49

    4.2000    4.3000    4.4000    4.5000    4.6000    4.7000    4.8000

  Columns 50 through 56

    4.9000    5.0000    5.1000    5.2000    5.3000    5.4000    5.5000

  Columns 57 through 63

    5.6000    5.7000    5.8000    5.9000    6.0000    6.1000    6.2000

  Columns 64 through 70

    6.3000    6.4000    6.5000    6.6000    6.7000    6.8000    6.9000

  Columns 71 through 77

    7.0000    7.1000    7.2000    7.3000    7.4000    7.5000    7.6000

  Columns 78 through 84

    7.7000    7.8000    7.9000    8.0000    8.1000    8.2000    8.3000

  Columns 85 through 91

    8.4000    8.5000    8.6000    8.7000    8.8000    8.9000    9.0000

  Columns 92 through 98

    9.1000    9.2000    9.3000    9.4000    9.5000    9.6000    9.7000

  Columns 99 through 101

    9.8000    9.9000   10.0000


v1D =

  Columns 1 through 7

   10.0000    9.9000    9.8000    9.7000    9.6000    9.5000    9.4000

  Columns 8 through 14

    9.3000    9.2000    9.1000    9.0000    8.9000    8.8000    8.7000
```

```
Columns 15 through 21

  8.6000    8.5000    8.4000    8.3000    8.2000    8.1000    8.0000

Columns 22 through 28

  7.9000    7.8000    7.7000    7.6000    7.5000    7.4000    7.3000

Columns 29 through 35

  7.2000    7.1000    7.0000    6.9000    6.8000    6.7000    6.6000

Columns 36 through 42

  6.5000    6.4000    6.3000    6.2000    6.1000    6.0000    5.9000

Columns 43 through 49

  5.8000    5.7000    5.6000    5.5000    5.4000    5.3000    5.2000

Columns 50 through 56

  5.1000    5.0000    4.9000    4.8000    4.7000    4.6000    4.5000

Columns 57 through 63

  4.4000    4.3000    4.2000    4.1000    4.0000    3.9000    3.8000

Columns 64 through 70

  3.7000    3.6000    3.5000    3.4000    3.3000    3.2000    3.1000

Columns 71 through 77

  3.0000    2.9000    2.8000    2.7000    2.6000    2.5000    2.4000

Columns 78 through 84

  2.3000    2.2000    2.1000    2.0000    1.9000    1.8000    1.7000

Columns 85 through 91

  1.6000    1.5000    1.4000    1.3000    1.2000    1.1000    1.0000

Columns 92 through 98

  0.9000    0.8000    0.7000    0.6000    0.5000    0.4000    0.3000

Columns 99 through 101

  0.2000    0.1000         0
```

Problem 2

```
v2A = [4 2 5];
```

```
v2B = [3 8 9];
dotV2 = dot(v2A, v2B);
mag = dotV2/(norm(v2A)*norm(v2B))
theta = acosd(mag)
```

```
mag =

    0.8769


theta =

   28.7279
```

Problem 3

```
sum3A = sum(0:100)
sum3B = sum([0:100].^2)
```

```
sum3A =

        5050


sum3B =

      338350
```

Problem 4

```
arg = -pi/2;
sum4 = arg;
summand = arg;
i = 2;
while abs(summand) > 10^-8
    power = i*2-1;
    summand = (-1)^(i-1)*(arg)^(power)/factorial(power);
    sum4 = sum4 + summand;
    i = i + 1;
end
sum4
```

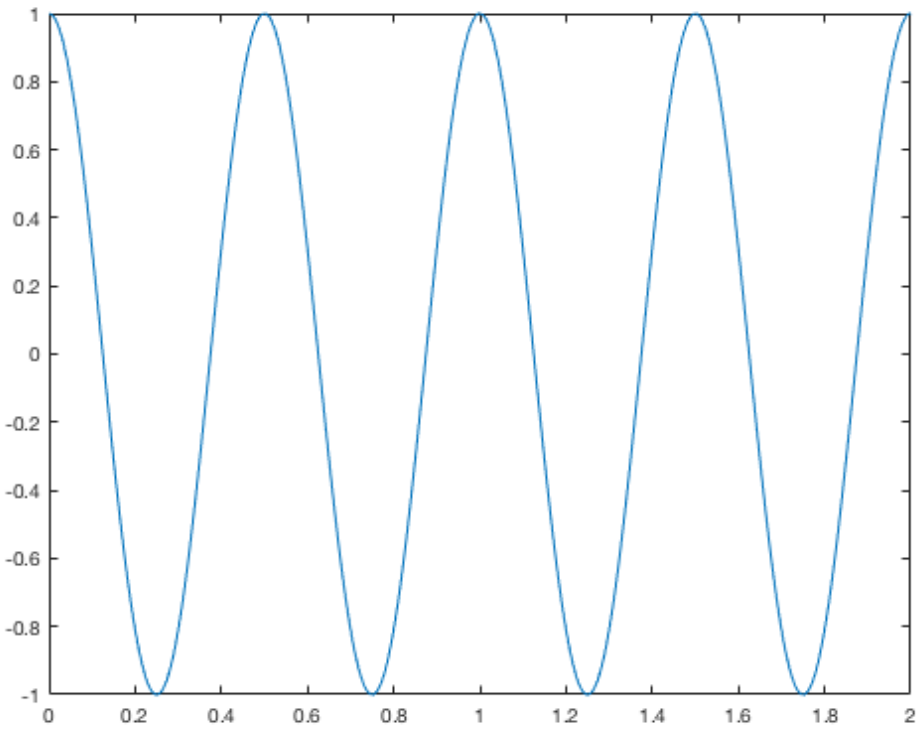
```
sum4 =

   -1.0000
```

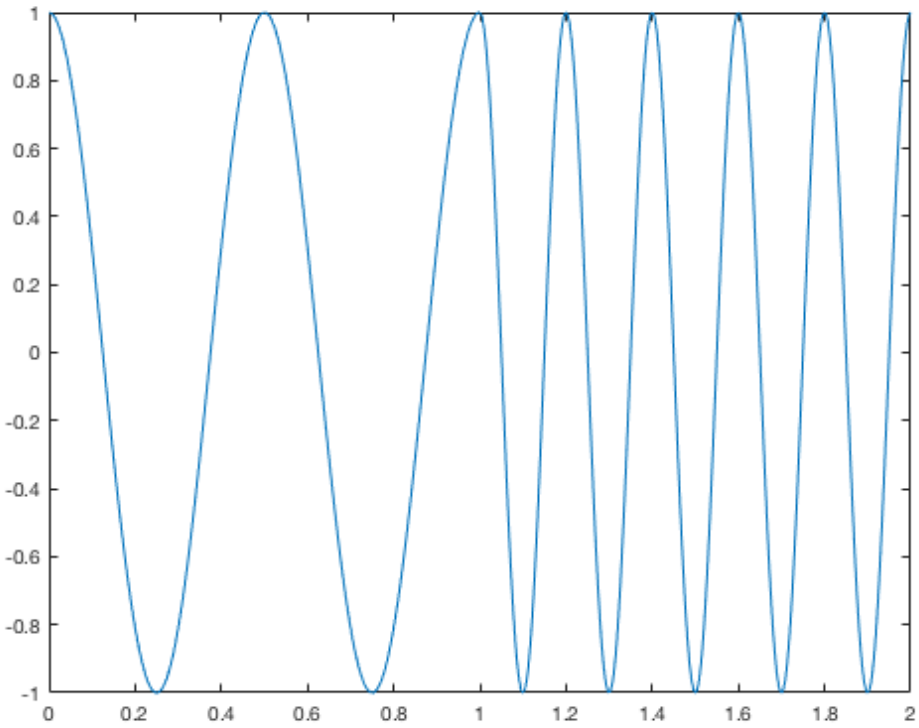
Problem 5

```
sum5 = mysum(2,3)
```

Problem 6

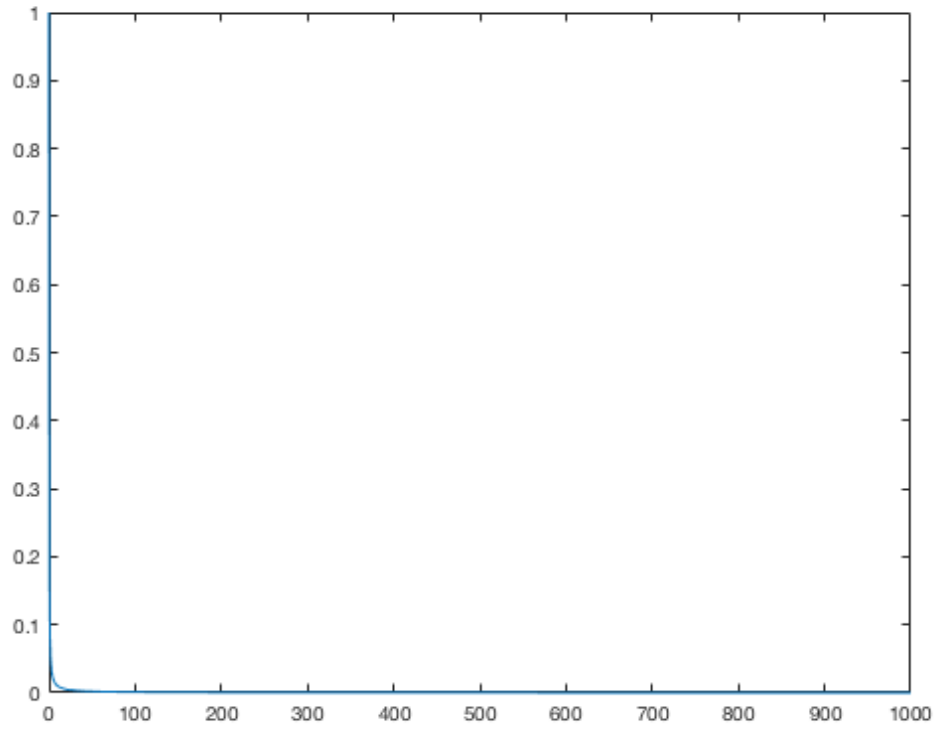
```
f = [2 5];
t1 = linspace(0,1,360);
t2 = linspace(1,2,360);

y1 = cos(2*pi*f(1)*t1);
y2 = cos(2*pi*f(1)*t2);

t = [t1, t2];
y = [y1, y2];

figure 'Name' 'Problem 6a (2Hz)'
plot(t, y);

figure 'Name' 'Problem 6b'
y3 = cos(2*pi*f(1)*t1);
y4 = cos(2*pi*f(2)*t2);

t = [t1, t2];
y = [y3, y4];

plot(t, y);
```

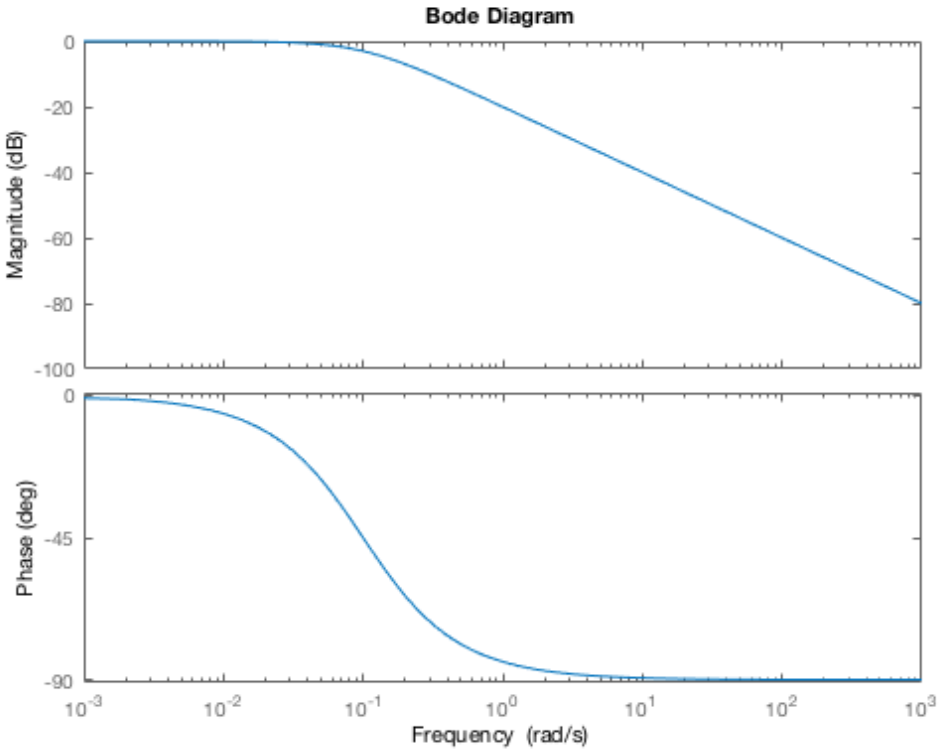




Problem 7

```
figure 'Name' 'Problem 7a'
RC = 10;
w = 0:0.001:1000;
H = 1./sqrt(1+(w*RC).^2);
plot(w,H);

figure 'Name' 'Problem 7b'
s = tf('s');
H = 1/(RC*s+1);
bode(H, {0, 1000});
```





Function Definitions

```
function z = mysum(x,y)
z = x + y;
```

```
end
```

```
sum5 =

     5
```

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