Problem 1

```
>> aRow=3:8

aRow =

    3    4    5    6    7    8

>> bRow=1.3:.4:2.5

bRow =

   1.3000    1.7000    2.1000    2.5000

>> cRow=9:-2:1

cRow =

    9    7    5    3    1
```

Problem 2

```
>> aCol=[aRow]'

aCol =

    3
    4
    5
    6
    7
    8

>> bCol=[bRow]'

bCol =

   1.3000
   1.7000
```

```
   2.1000
   2.5000
>> cCol=[cRow]'

cCol =

    9     7     5     3
    1
```

Problem 3

```
>> concat=[aRow bRow]

concat =

  Columns 1 through 8

   3.0000    4.0000    5.0000    6.0000    7.0000    8.0000    1.3000    1.7000

  Columns 9 through 10

   2.1000    2.5000
```

Problem 4

```
>> vec4=linspace(-2*pi, 2*pi, 30)

vec4 =

  Columns 1 through 8

  -6.2832   -5.8499   -5.4165   -4.9832   -4.5499   -4.1166   -3.6832   -3.2499

  Columns 9 through 16

  -2.8166   -2.3833   -1.9500   -1.5166   -1.0833   -0.6500   -0.2167    0.2167
```

```
 Columns 17 through 24
   0.6500    1.0833    1.5166    1.9500    2.3833    2.8166    3.2499    3.6832

 Columns 25 through 30

   4.1166    4.5499    4.9832    5.4165    5.8499    6.2832
```

Problem 5

```
>> linspace(1, 3, 5)

ans =

   1.0000    1.5000    2.0000    2.5000    3.0000
```

Problem 6

```
>> myRand=randi([10, 15])

myRand =

   14

>> vec6=linspace(1, myRand, 3)

vec6 =

   1.0000    7.5000   14.0000
```

Problem 7

```
>> aRow(1:2:end)

ans =
```

```
   3    5    7
```

```
>> cRow(1:2:end)
ans =

   9    5    1
```

Problem 8

```
>> mat8=[9 5 7 8; 4 8 2 7]

mat8 =

   9    5    7    8
   4    8    2    7

>> mat8(1,:)=1:4

mat8 =

   1    2    3    4
   4    8    2    7

>> mat8(:,3)=[76 24]

mat8 =

   1    2   76    4
   4    8   24    7
```

Problem 9 Part A

```
>> mat9a = rand(2,3)

mat9a =

    0.1270    0.6324    0.2785
```

```
    0.9134    0.0975    0.5469
```

Part B

```
>> mat9b=4+(15-4)*rand(2, 3)

mat9b =

   12.8031    8.6394   12.7143
    5.5607   14.0731   14.5544
```

Part C

```
>> mat9c=randi([10, 50], 2, 3)

mat9c =

    49    16    49
    49    49    29
```

Problem 10

Part A

```
>> rows=randi(5)

rows =

     4

>> cols=randi(5)

cols =

     1
```

```
>> mat10a=zeros(rows, cols)

mat10a =

     0
     0
     0
     0
```

Part B

```
>> rows=randi(5)

rows =

     4

>> cols=randi(5)

cols =

     4

>> mat10b=ones(rows, cols)

mat10b =

     1     1     1     1
     1     1     1     1
     1     1     1     1
     1     1     1     1
```

Problem 11

```
>> mat11=rand(3, 5)

mat11 =
```

```
    0.7431    0.1712    0.2769    0.8235    0.9502
    0.3922    0.7060    0.0462    0.6948    0.0344
    0.6555    0.0318    0.0971    0.3171    0.4387
```

```
>> mat11(3,:)=[]
```

```
mat11 =

    0.7431    0.1712    0.2769    0.8235    0.9502
    0.3922    0.7060    0.0462    0.6948    0.0344
```

Problem 12

```
>> x=linspace(-pi, pi, 20)
```

```
x =

  Columns 1 through 8

   -3.1416   -2.8109   -2.4802   -2.1495   -1.8188   -1.4881   -1.1574   -0.8267

  Columns 9 through 16

   -0.4960   -0.1653    0.1653    0.4960    0.8267    1.1574    1.4881    1.8188

  Columns 17 through 20

    2.1495    2.4802    2.8109    3.1416
```

```
>> y=sin(x)
```

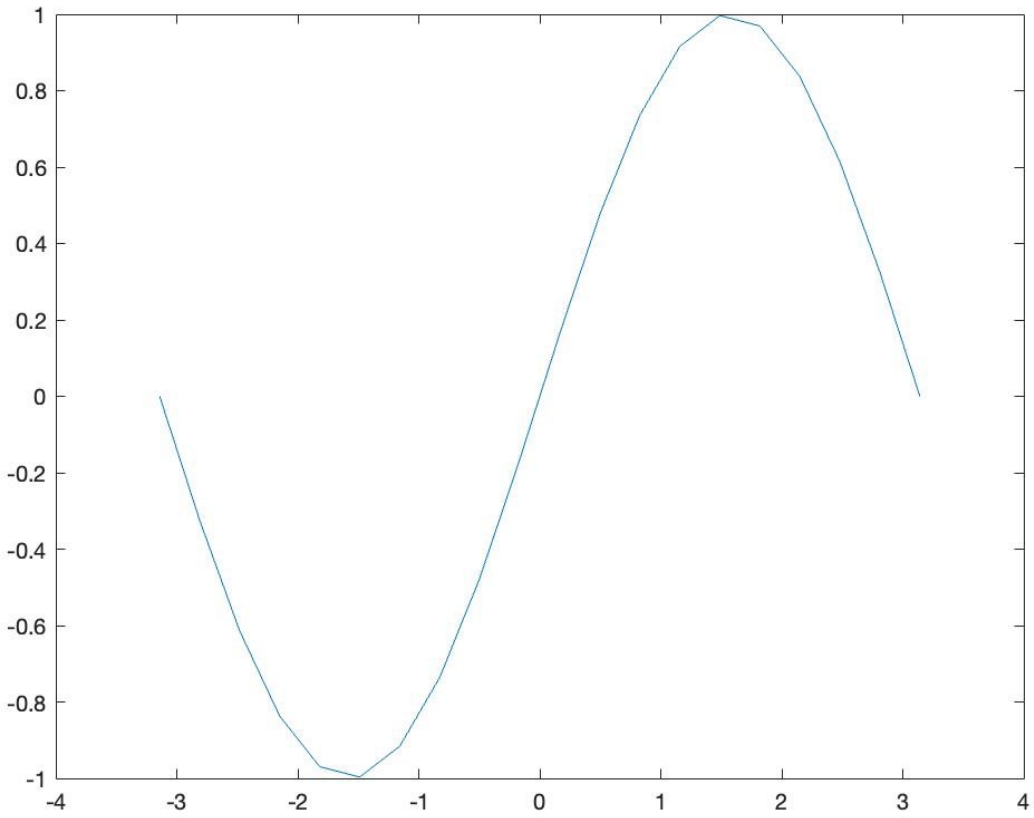
```
y =

  Columns 1 through 8

   -0.0000   -0.3247   -0.6142   -0.8372   -0.9694   -0.9966   -0.9158   -0.7357

  Columns 9 through 16
```

-0.4759 -0.1646 0.1646 0.4759 0.7357 0.9158 0.9966 0.9694

Columns 17 through 20

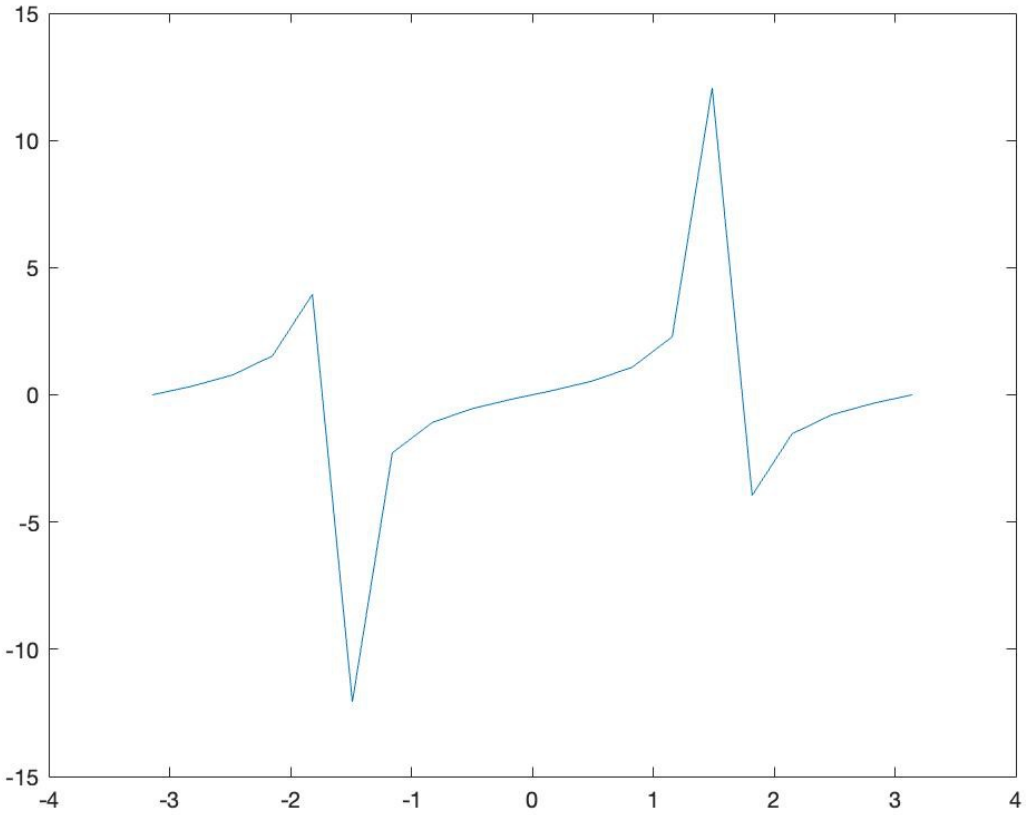
0.8372 0.6142 0.3247 0.0000

Problem 13

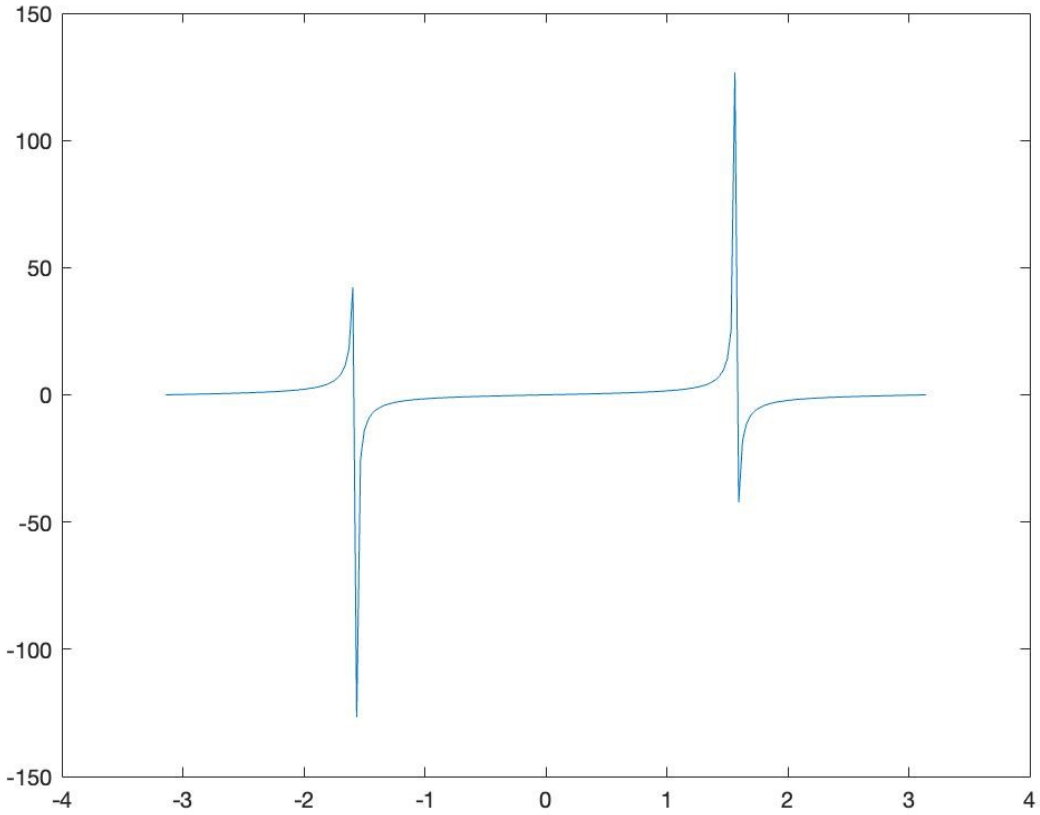


Problem 14

```
>> x=linspace(-pi, pi, 20);
>> y=tan(x);
```




```
>> x=linspace(-pi, pi, 200);
>> y=tan(x);
```



Problem 15

```
>> mat15=randi([-5, 5], 3, 5)
```

mat15 =

-1	-3	2	-2	-4
3	0	2	2	-4
3	-1	3	2	0

```
>> sign(mat15)
```

ans =

-1	-1	1	-1	-1

```
    1    0    1    1   -1
    1   -1    1    1    0
```

Problem 16

```
>> row16=randi([5, 12], 1, 6)

row16 =

    5    7    6   11    7    9
```

Part A

```
>> min(row16)

ans =

     5

>> max(row16)

ans =

    11

>> sum(row16)

ans =

    45

>> prod(row16)

ans =

    145530
```

Part B

```
>> diff(row16)
ans =

   2   -1    5   -4    2
```

Part C

```
>> cumsum(row16)

ans =

   5   12   18   29   36   45

>> cumprod(row16)

ans =

        5       35      210     2310    16170   145530
```

Problem 17

```
>> mat17=randi([10, 30], 3, 5)

mat17 =

   13   23   19   29   21
   22   24   11   13   30
   15   25   14   27   11
```

Part A

```
>> min(mat17)

ans =

   13   23   11   13   11

>> max(mat17)
ans =

   22   25   19   29   30

>> sum(mat17)

ans =

   50   72   44   69   62

>> prod(mat17)

ans =

      4290      13800       2926      10179       6930
```

Part B

```
>> min(mat17, [], 2)

ans =

   13
   11
   11

>> max(mat17, [], 2)

ans =
```

```
    29
    30
    27

>> sum(mat17, 2)

ans =

   105
   100
    92
>> prod(mat17, 2)

ans =

   3459729
   2265120
   1559250
```

Problem 18

```
>> A-3

ans =

    0    1    2    3
    5    2   -1   -4
```

Problem 19

```
>> A+B

ans =

    4    6    8   10
   13   11    9    7
```

Problem 20

```
>> A.*B

ans =

    3    8   15   24
   40   30   14   -8
```

Problem 21

```
>> B.*B

ans =

    1    4    9   16
   25   36   49   64
```