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```
close all
clear all
clc

%Ben Ridenbaugh
%EGR 1101
%HW 6
```

Problem 1

a

```
y=problem1function(-1.5);
y=problem1function(5);
```

```
y =

   25.7595


y =

   33.4695
```

b

```
x=linspace(-2,6);
figure
plot(x,problem1function(x))
```

```
y =

  Columns 1 through 7
```

53.9347   48.3690   43.2238   38.4766   34.1059   30.0914   26.4132

Columns 8 through 14

    23.0529   19.9924   17.2148   14.7038   12.4437   10.4199   8.6182

Columns 15 through 21

     7.0251   5.6278   4.4140   3.3722   2.4911   1.7604   1.1699

Columns 22 through 28

     0.7101   0.3719   0.1466   0.0262   0.0028   0.0691   0.2180

Columns 29 through 35

     0.4429   0.7375   1.0959   1.5124   1.9816   2.4986   3.0586

Columns 36 through 42

     3.6571   4.2898   4.9528   5.6422   6.3545   7.0864   7.8347

Columns 43 through 49

     8.5965   9.3690   10.1497   10.9361   11.7260   12.5172   13.3078

Columns 50 through 56

    14.0960   14.8800   15.6583   16.4294   17.1920   17.9448   18.6867

Columns 57 through 63

    19.4167   20.1337   20.8370   21.5257   22.1991   22.8566   23.4976

Columns 64 through 70

    24.1217   24.7283   25.3171   25.8878   26.4401   26.9737   27.4885

Columns 71 through 77

    27.9844   28.4611   28.9188   29.3573   29.7766   30.1768   30.5580

Columns 78 through 84

    30.9203   31.2636   31.5883   31.8945   32.1823   32.4519   32.7037

Columns 85 through 91

    32.9377   33.1542   33.3535   33.5360   33.7017   33.8511   33.9845

Columns 92 through 98

    34.1021   34.2043   34.2913   34.3635   34.4213   34.4650   34.4948
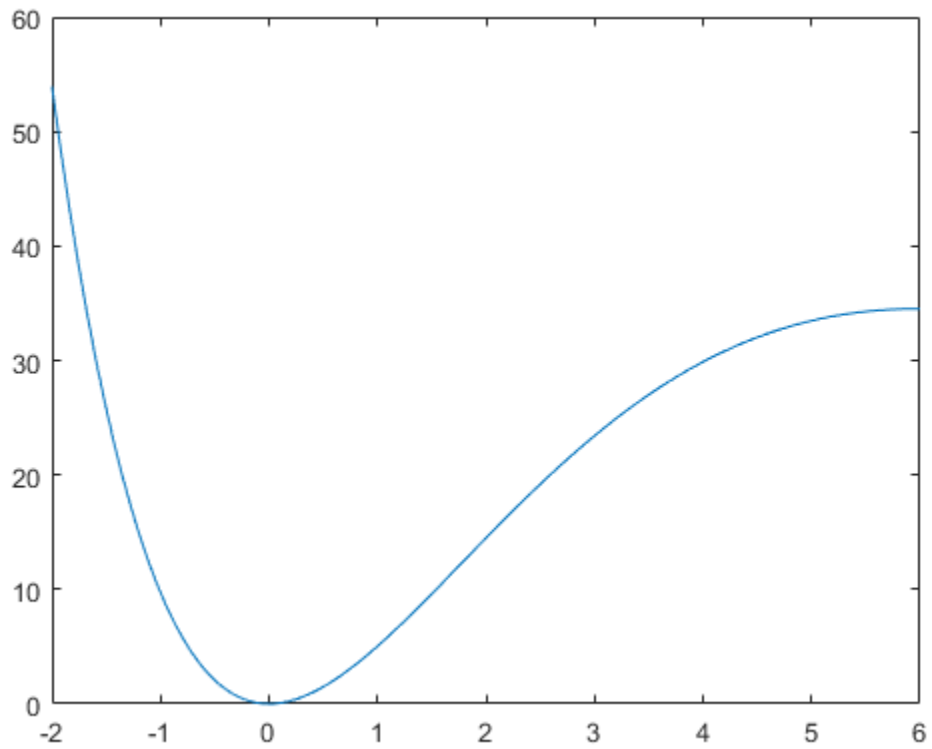
Problem 21

a

```
y=AddVecPol(5,23,12,40);
```

r =

   16.8451

th =

   35.0215

b

```
y=AddVecPol(6,80,15,125);
```

```
r =

   19.7048


th =

  112.5663
```

Problem 24

```
y=CartToPolar(14,9);
y=CartToPolar(-11,-20);
y=CartToPolar(-15,4);
y=CartToPolar(13.5,-23.5);


th =

   32.7352


rad =

    0.5713


th =

  241.1892


rad =

    4.2095


th =

  104.9314


rad =

    1.8314


th =

  330.1240
```

```
rad =

    5.7618
```

Extra Problem 1

```
y=CartToPolar2(1,1);
y=CartToPolar2(1,-1);
y=CartToPolar2(-1,1);
y=CartToPolar2(-1,-1);


th =

     45


th =

    315


th =

    135


th =

    225
```

Extra Problem 2

```
y=quadroots(1,0,4);
y=quadroots(1,4,4);


uppervalue =

   0.0000 + 2.0000i


lowervalue =

   0.0000 - 2.0000i


uppervalue =

    -2
```

```
lowervalue =

    -2
```

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