GNUPLOT
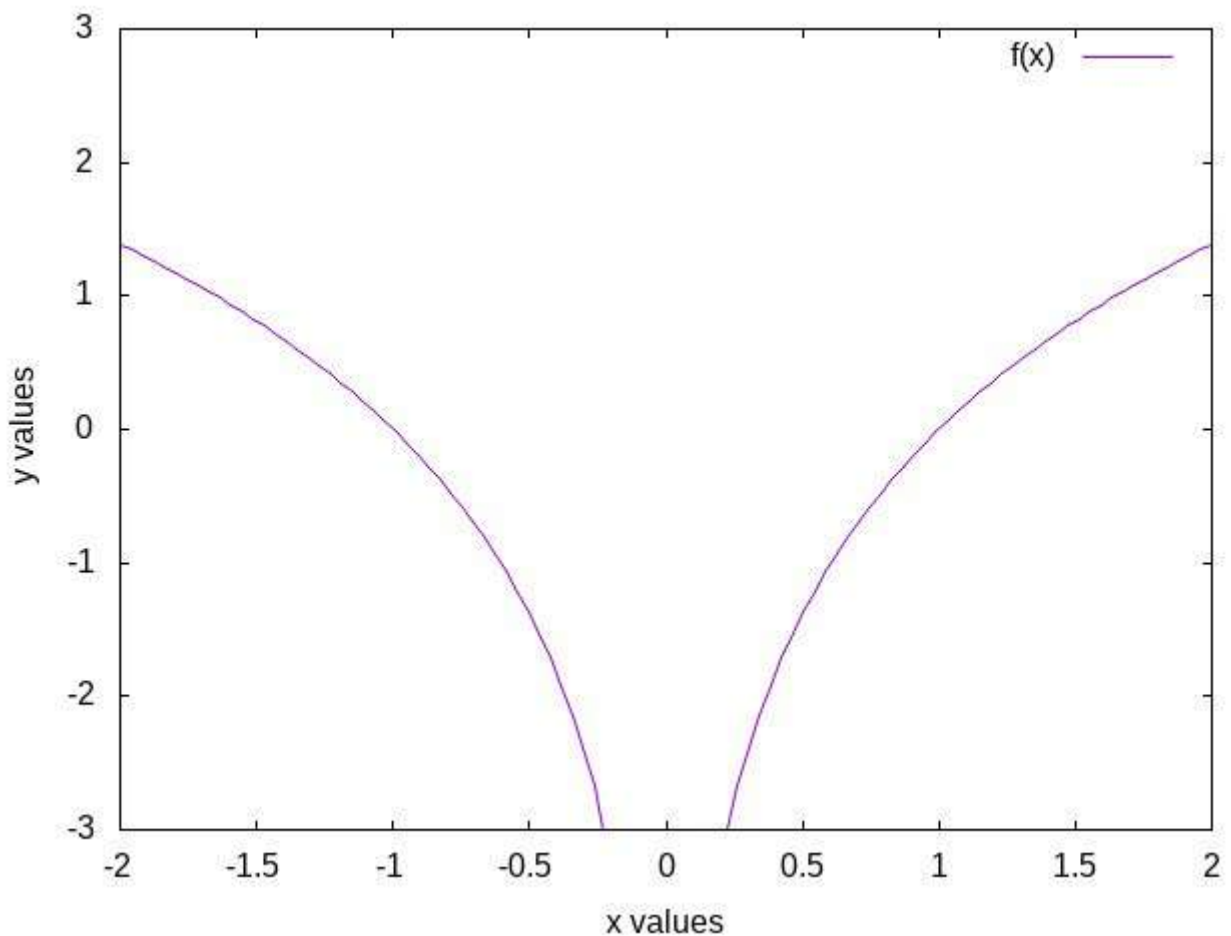
Plot of a function

Problem 1.

Define a function y=ln(x^2). Set the range of x values from -2 to +2 and range of y values from 3 to +3. Show both the axis on the plot. The labels of x axis and y axis be "x values" and "y values" respectively. Ticks of the x axis will be at interval of 0.5. Ticks of the y axis will be at interval of 1. Plot the function and store the plot in a file and print it.

```
f(x) = log(x**2)
set xrange [-2:2]
set yrange [-3:3]
set xlabel " x values"
set ylabel " y values"
set xtics 0.5
set ytics 1
plot f(x)
set term jpeg
set  output "SEM1-PLOT1.jpeg"
replot
exit
```

Problem 2.

Plot sin(x)/x, sinh(x)/x and y=1 on same graph. The line width of the three curves to be different. Set the range of x values from -π to +π and the range of y values from 0 to 5. Show y axis on the plot. Set title " Plot of different functions of x". The labels of x and y axis to be "x values" and "y values" respectively. Store the plot in a file and print it.


f1(x)=sin(x)/x
f2(x)=sinh(x)/x
f3(x)=1
set yrange[0:5]
set title "plot of different functions of x"
set xlabel "x values"
set ylabel "y values"
set xrange[-pi:pi]
plot f1(x) lw 1, f2(x) lw 1.5, f3(x) lw 2
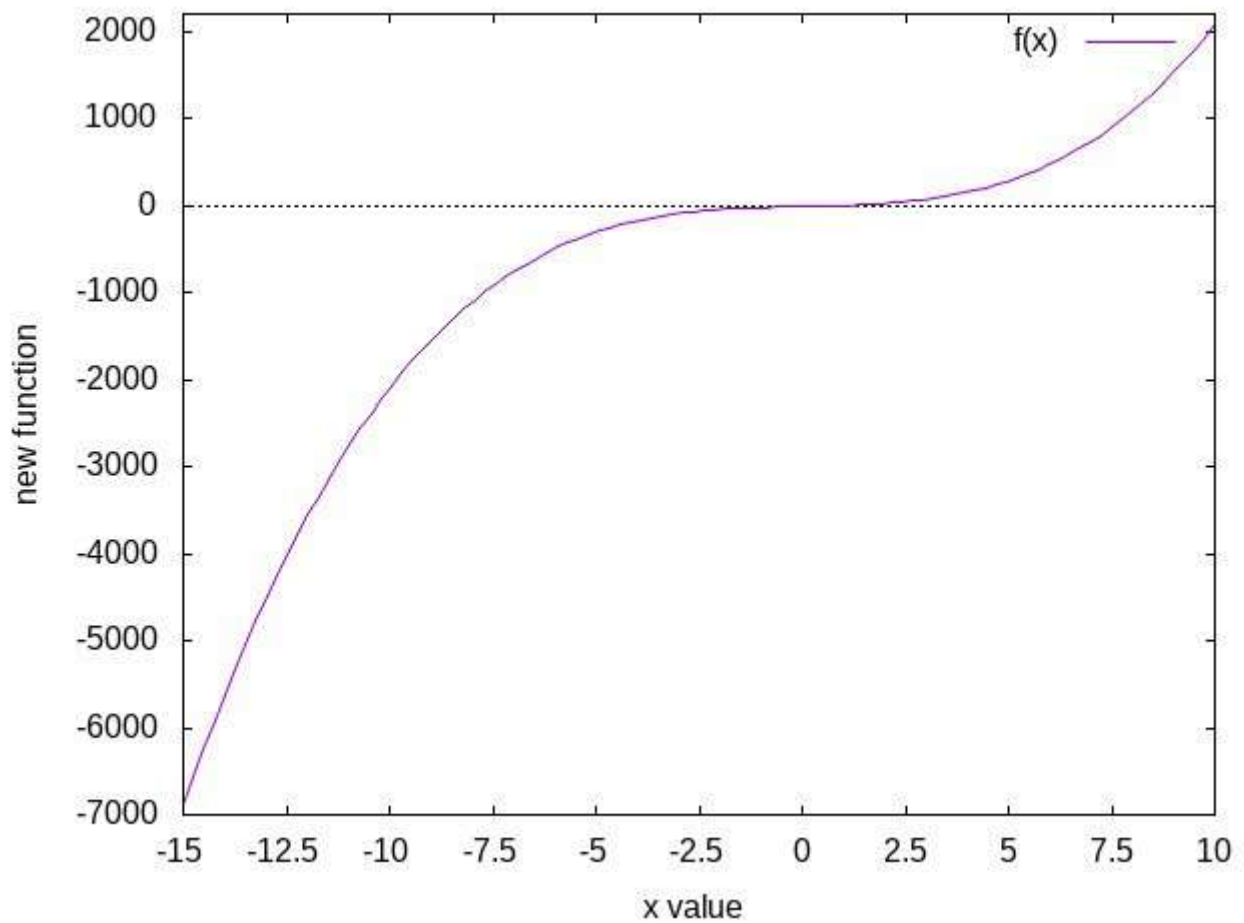set term jpeg
set output "sem1-gnu3.jpeg"
replot
exit
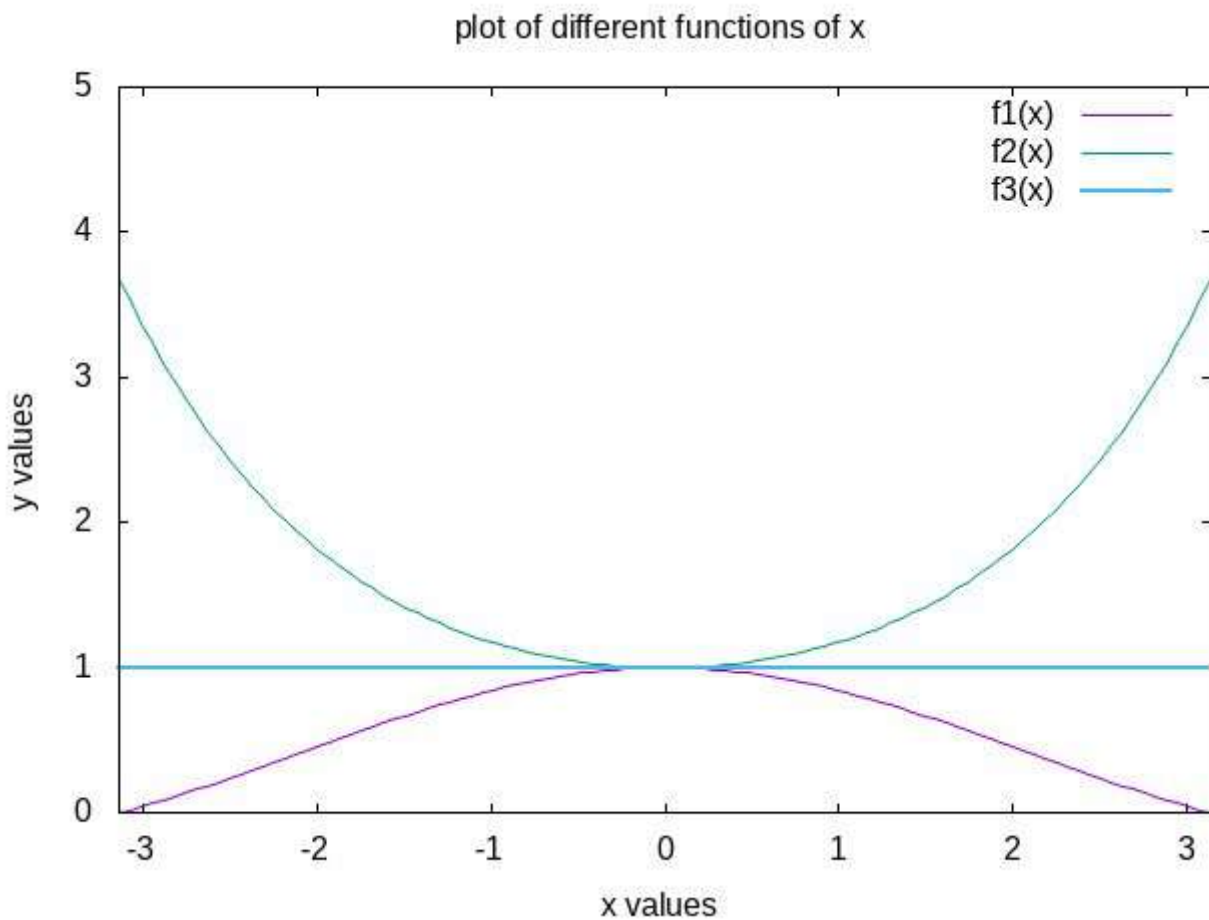
Problem 3.
Define a function f(x)=x³-4x-8. Set the range of x values from -10 to +15 and the range of y values from -2000 to +2500. Show both the axes on the plot. The labels of x and y axis will be "x values" and "my function" respectively. Plot the function and store the plot in a file and print it.

f(x) = x**3-4.0*x-8
set xrange [-10:15]
set yrange [-2000:2500]
set zeroaxis
set xlabel "x values"
set ylabel "my function"
plot f(x)
set term jpeg
set output "gnu-sem1-plot5.jpeg"
replot
exit
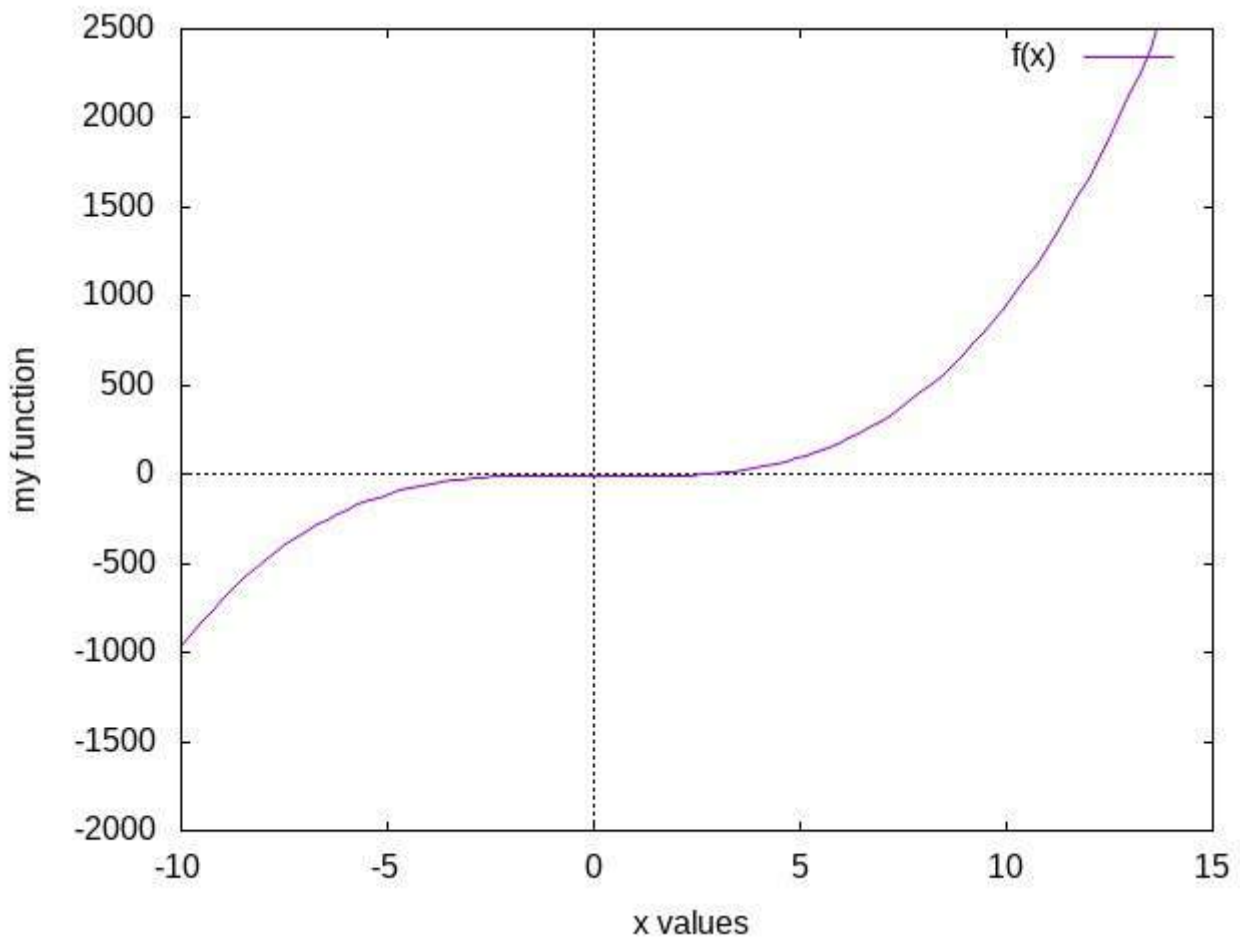
Assignment 1.

```
f(x)=2*x**3+9*x-11
set xrange [-15:10]
set yrange [-7000:2200]
plot f(x)
set xzeroaxis
set xlabel "x value"
set ylabel "new function"
set xtics 2.5
set term jpeg
set output "assignment1.jpeg"
replot
exit
```

Assignment 2.

```
f(x)=cos(x)-0.5*x
set xrange [-20:+20]
set yrange [-10:+12]
plot f(x)
set yzeroaxis
set xlabel "x value"
set ylabel "cos(x)-0.5x"
set xtics 2
set term jpeg
set output "assignment2.jpeg"
replot
exit
```
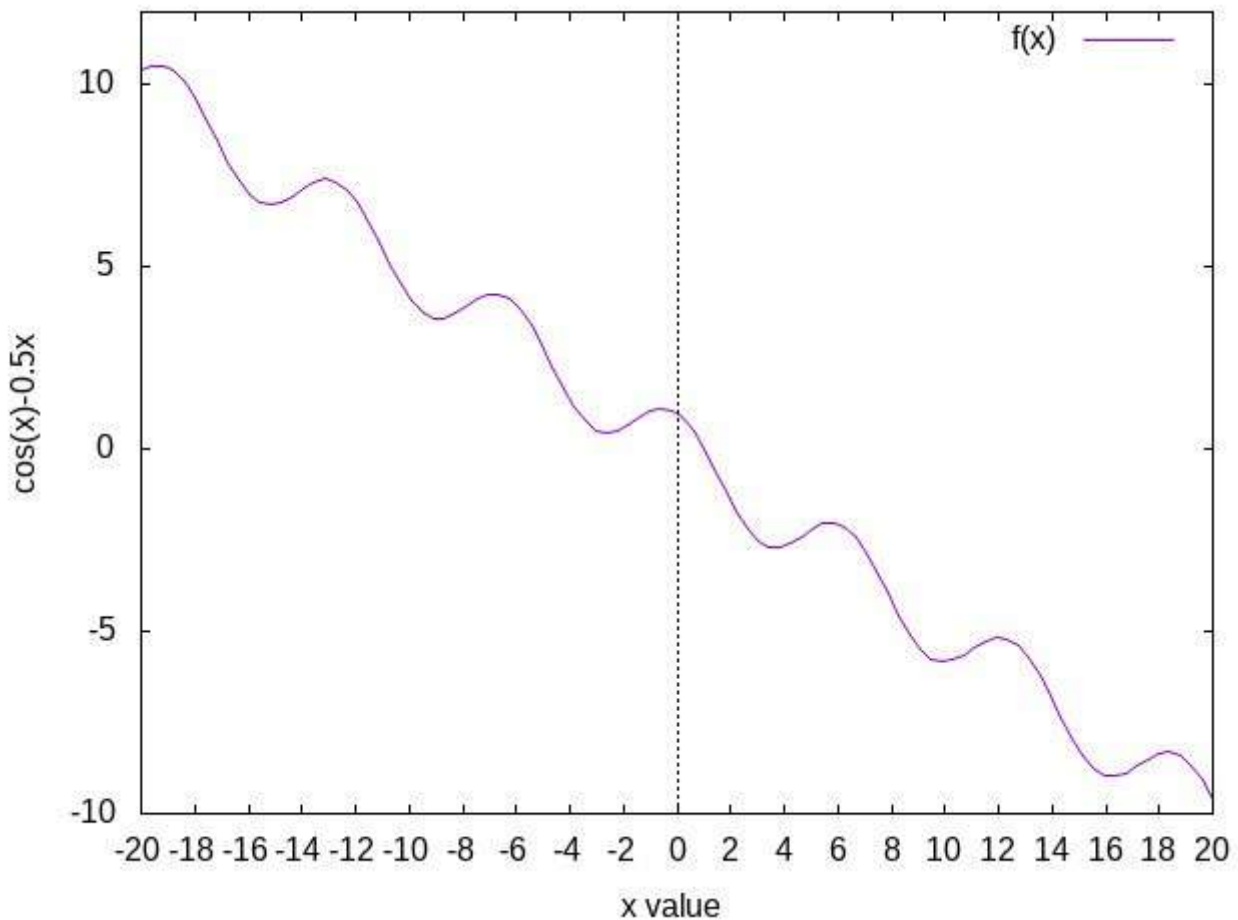
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