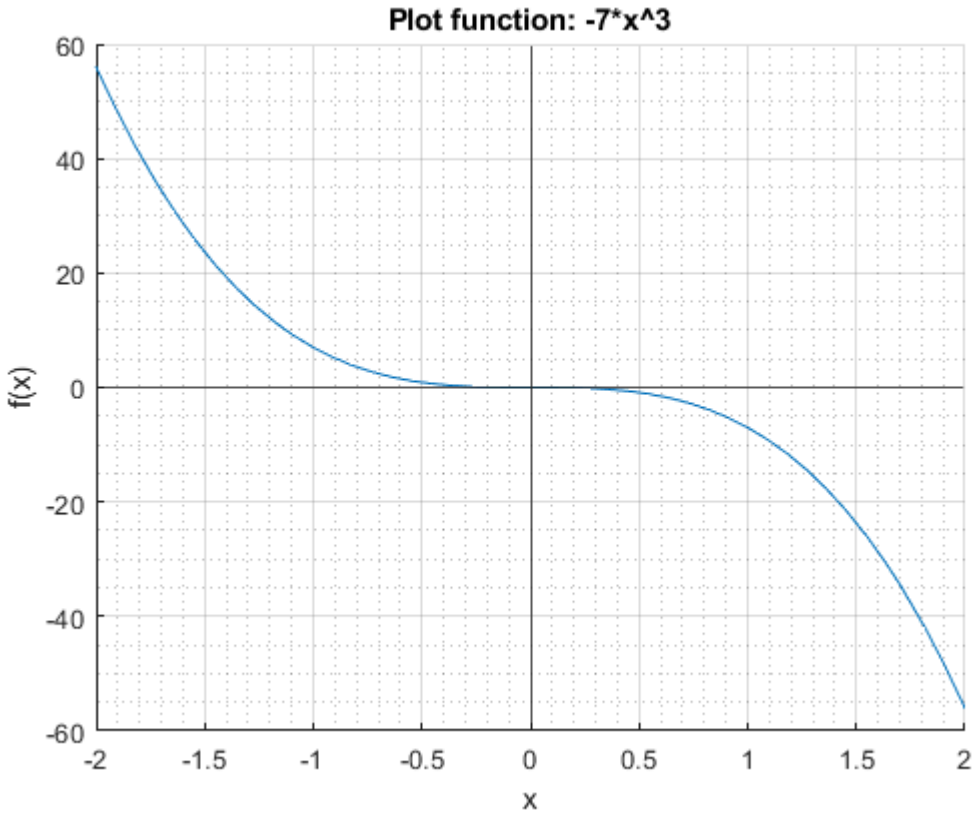
Matlab Graph One Variable Function

back to Fan's Intro Math for Econ, Matlab Examples, or MEconTools Repositories

fplot a Function of X

Given a cubic (polynomial) function, graph it using the fplot function, between some values along the domain of the function. This function is defined everywhere along the real-line. Note that fplot automatically resizes the y-scale to show the full plot clearly.

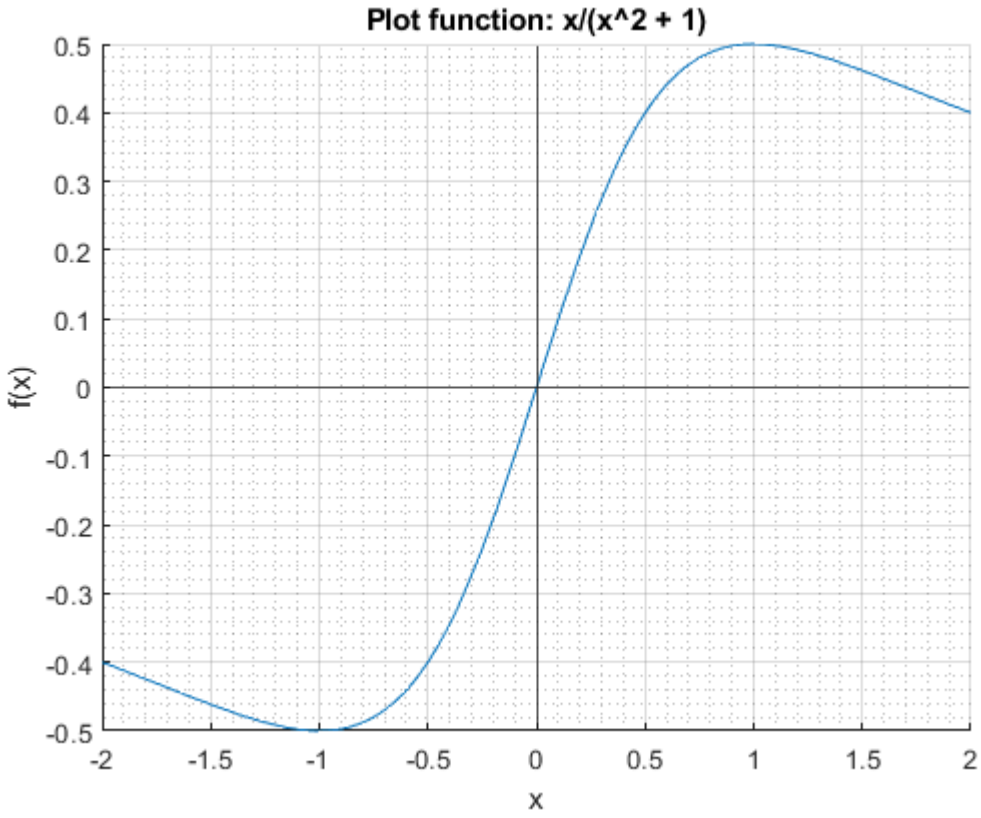
```
close all
figure();
hold on;

% Define a function
syms x
f_x = -7*x^(3);

% Set bounds on the domain
fl_x_lower = -2;
fl_x_higher = 2;

% Graph
fplot(f_x, [fl_x_lower, fl_x_higher])

% Add x-axis and y-axis
xline(0);
yline(0);

% Title and y and y-able
title(['Plot function: ' char(f_x)],'Interpreter',"none");
ylabel('f(x)');
xlabel('x');

% Add grids
grid on;
grid minor;
```



Plot a rational function, that is a function of polynomials.

```
close all
figure();
hold on;

% Define a function
syms x
f_x = (x)/(x^2 + 1);

% Set bounds on the domain
fl_x_lower = -2;
fl_x_higher = 2;

% Graph
fplot(f_x, [fl_x_lower, fl_x_higher])

% Add x-axis and y-axis
xline(0);
yline(0);

% Title and y and y-able
title(['Plot function: ' char(f_x)],'Interpreter',"none");
ylabel('f(x)');
xlabel('x');

% Add grids
```

```
grid on;
grid minor;
```



Plot a function that is not defined at all points along the real line. Note also that the function always returns a positive value. Note the fplot function automatically identifies the part of the x-axis where the function is not defined, and draws dashed lines to demarcate.

```
close all
figure();
hold on;

% Define a function
syms x
f_x = 5*(x^5 - 6*x^2 + 3*x)^(2/3);

% Set bounds on the domain
fl_x_lower = -1;
fl_x_higher = 2;

% Graph
fplot(f_x, [fl_x_lower, fl_x_higher])

% Add x-axis and y-axis
xline(0);
yline(0);

% Title and y and y-able
```

```
title(['Plot function: ' char(f_x)],'Interpreter',"none");
ylabel('f(x)');
xlabel('x');

% Add grids
grid on;
grid minor;
```