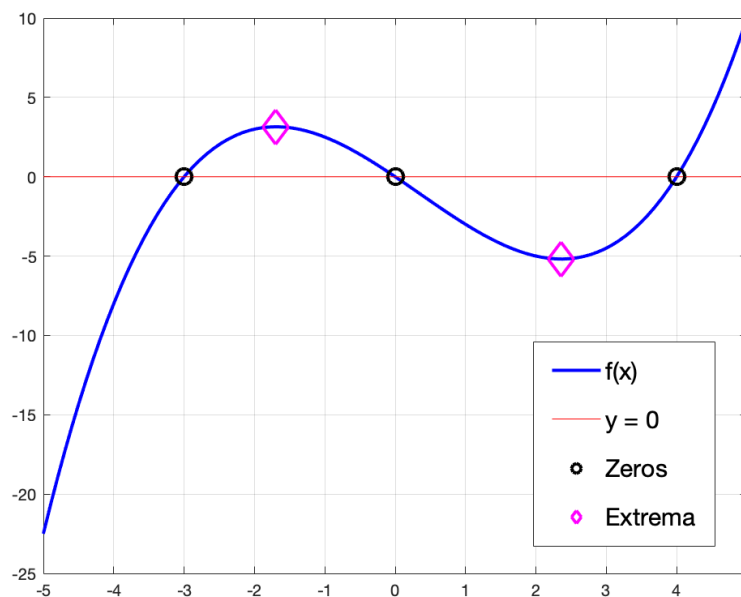


**Instructions:**

- Your submission will consist of four files (and nothing else):
  - minmaxplot.m
  - minmaxplot.png
  - piecewisepolyplot.m
  - piecewisepolyplot.png
- **Very Important:** Create a single compressed (.zip) folder with these files. Name it LastNameFirstNameHW4, e.g. SchangTomHW4.zip

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1. Given  $f(x)$  on some interval  $[a, b]$ , you want to plot the function itself along with its zeros, local min and local max. Here is a sample plot for  $f(x) = (1/4)(x+3)x(x-4)$ ,  $[a, b] = [-5, 5]$ .



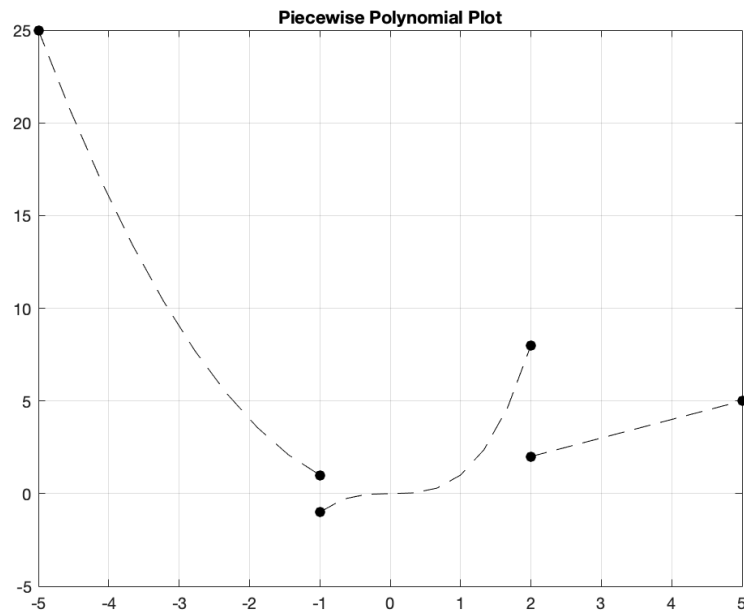
Write a script `minmaxplot.m`, recreates the same plot as closely as possible (style and all) when run, but with **red diamonds** instead of magenta. Save your result as `minmaxplot.png`.

*Note:* You should manually find and specify what the zeros and local extrema are in your script. In other words, your code is not expected to be “smart enough” to find them given any  $f(x)$  and  $[a, b]$  (though that would be nice!).

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2. Given a piecewise function  $f(x)$  on some interval  $[a, b]$ , we can plot the function along with where each piece starts and stops. Here is a sample plot for  $f(x)$  on the interval  $[-5, 5]$ .

$$f(x) = \begin{cases} x^2 & -5 \leq x < -1 \\ x^3 & -1 \leq x < 2 \\ x & 2 \leq x \leq 5 \end{cases}$$



Write a script `piecewisepolyplot.m`, recreates the same plot as closely as possible (style and all) when run, but with **red dotted lines** instead of black ones. Save your result as `piecewisepolyplot.png`.