

Project 1. Place the Newton code, and the `if-then-else` code above inside two nested `for` loops, looping over x -values and y -values from -2 to 2 (perhaps with a small step-size of 0.1 or 0.01). For each iteration set the starting point to $[x,y]$ before the Newton's Method part, and then plot the color point corresponding to the location of the resulting zero. So that the subsequent plot command do not erase the previous ones, put

```
1  clf %Clear the current Figure
   hold on %make sure subsequent plots do not erase the previous ones.
```

before the `for` loops. Thus the pseudo-code for this construction is:

```
2  initialize figure
   for x values
       for y values
           let  $X_0=(x,y)$  be the starting point for Newton's method
           find the color corresponding to the final point of iteration  $X$ 
           plot point  $X_0$  with correct color
       end loop y
   end loop x
```

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