Newtons Method

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1. The approximate solutions to the first problem along with the difference between each are as follows:
[-9.31312572e+00 9.31312572e+00
   [-7.04675277e+00 2.26637295e+00] [-5.38086290e+00 1.66588987e+00] [-4.17603601e+00 1.20482689e+00]
   [-3.33121446e+00 8.44821551e-01] [-2.77531123e+00 5.55903226e-01] [-2.45894948e+00 3.16361751e-01]
   [-2.33364157e+00 1.25307915e-01] [-2.31293727e+00 2.07042977e-02] [-2.31239365e+00 5.43622612e-04]
   [-2.31239328e+00 3.69942385e-07] [-2.31239328e+00 1.70974346e-13]]
   Differences are on the right)

2. For the second problem, I keep getting a division by zero error when i run the program or an out of domain error. I don't think that is right however I could not work around the issue and $sec^2(x)$