Exercise 28.

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In this problem I will diagonalize and find the eigenvalues of the matrix

$$A = \begin{pmatrix} x & 1 \\ 1 & -x \end{pmatrix}. \tag{1}$$

I will use the GSL library function Singular Value Decomposition to diagonalize A and the Real Symmetric Matrices function to find the eigenvalues of A. The eigenvalues of A can be seen as a function of x in figure **??**.

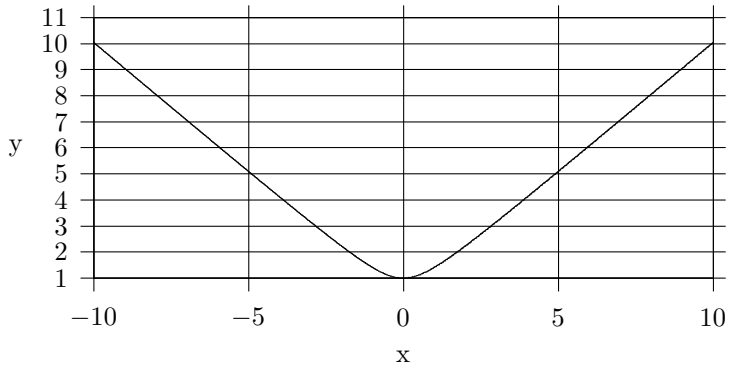

Figure 1: This is the plot of the eigenvalues for matrix A as a function of x.