Exercise 4 Hint

For part a), you could either start with `IdentityMatrix(n)`, and then change the 4 entries in the "2 by 2 block"; or you could start with `Matrix(n,n)` (which gives you an n by n matrix with zero entries), and then modify all the appropriate entries; or you could use the procedure `ElementaryMatrix` from sheet 5.

If you take the first route, you need to use

`IdentityMatrix(n,outputoptions=[shape=[]]);`.

The reason is that if you say a matrix is the identity matrix, then Maple won't let you change its entries, since it wants it to be the identity matrix forever. Telling Maple that you don't want the matrix to have any particular `shape` overrides this.

For part d): when you type `evalf(Eigenvalues(M));`, you get a `Vector` containing the different eigenvalues of `M`. You need to `convert` this vector into a list, change all its entries into their absolute values (remember `map`?), and then find the maximum entry (if `L` is a list, then `max(op(L))` gives its maximum entry).

For part e), remember *returning unevaluated* if your `plot` command gives an error. For some reason I'm not sure of, you seem to need to pass `eval(2*Pi*I*x)` to `BurauMatrixMaxAbsEigenvalue`, rather than just `2*Pi*I*x`.