(1) [Problem 5.6 Page 74]

(2) What does
\[
\frac{1}{4} \left[ \partial_1 \partial_2 + \partial_1 \partial_2 + \partial_1 \partial_2 + \partial_1 \partial_2 \right] U_{i,j}
\]
means in terms of a difference stencil. Show that this is \( o(h^2) \) accurate on a uniform mesh \( h \).

(3) Consider [Problem 5.18 Page 76]
   a) Use PDE TOOL to solve the problem
   b) Use fem_2d.rar to solve the problem
   c) Compare the result at part (a) with part (b)

(4) Consider [Problem 4.5 Page 49]
   [Hint: use fdm.m code to create the discrete laplacian matrix]