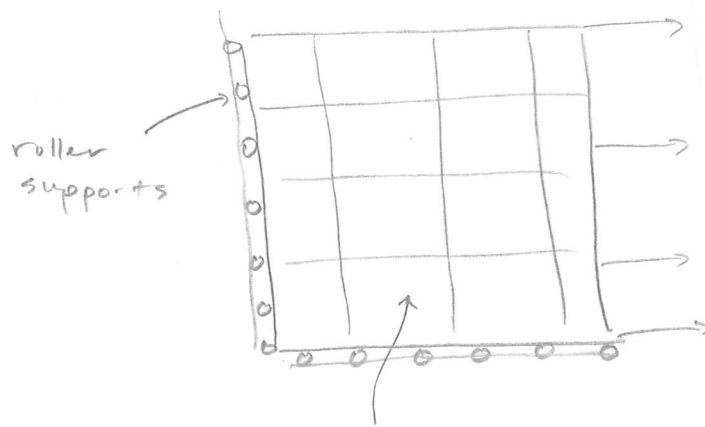


## Assignment 8

For the linear elastostatic setting write an assembly routine for  $\underline{\underline{K}}$ . For the required form for  $\underline{\underline{D}}$  refer to the Hughes book.

Now that you can compute the residual  $\underline{\underline{R}}$  and  $\underline{\underline{K}}$  complete your implementation of the Newton-Raphson driver algorithm.

Test that your implementation works correctly for 1D, 2D, and 3D for the following "paten tests" (only shown for 2D):



run for a constant displacement boundary condition in the  $x$ -direction and a constant traction force in the  $x$ -dir.

test for various mesh densities and values of  $E$  and  $\nu$