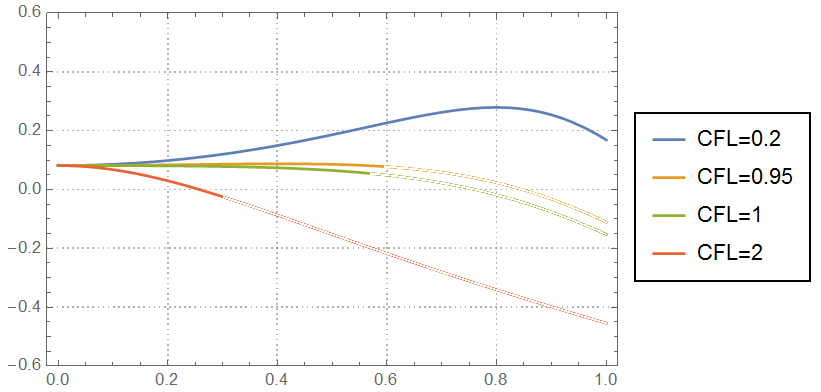
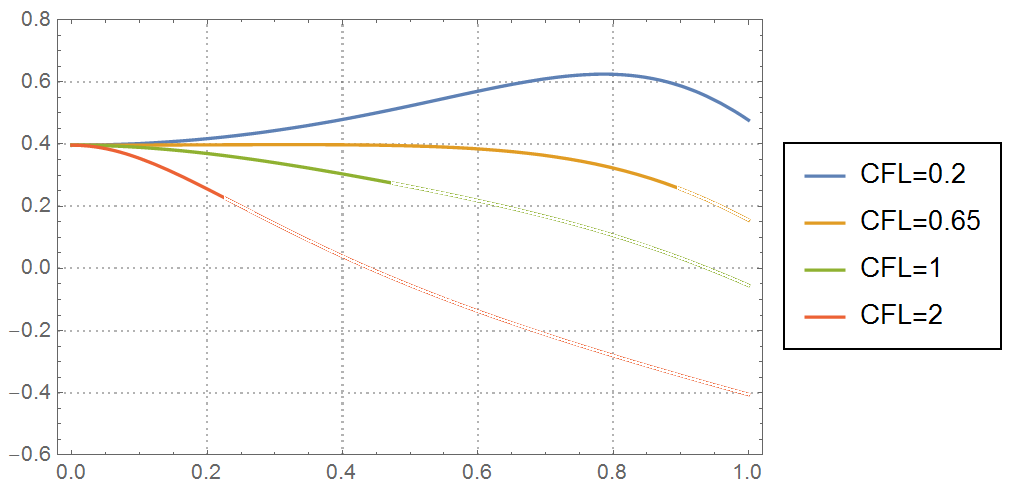
**Solution 1 b)** Numerical Dispersion Curves

For :



For :



**Solution 1 c)** Values of corresponding to

corresponding to have been presented in the above plots as dulled curves.

**Solution 1 d)** Optimal CFL values

In case of , wave modes for have value of about 0.08 and the optimal CFL value is 0.95. Since the shortest wavelength is , wave nodes with do exist. There is no CFL number for which all modes are non-dispersive. In case of , the value is 0.40 and the optimal CFL value is 0.65. The discarded wave modes (i.e. the ones corresponding to ) have been presented above as dulled curves.