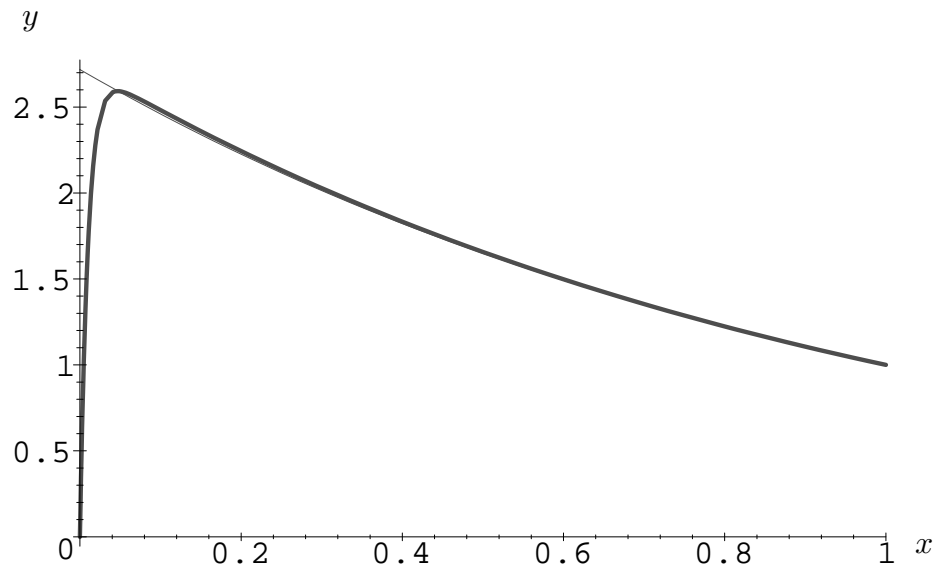


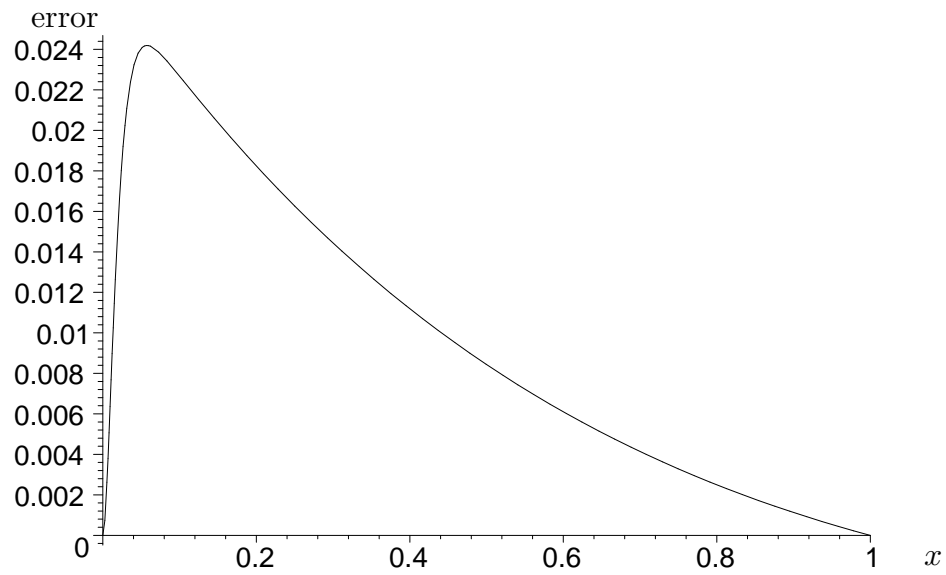
Singularly Perturbed ODEs

Consider the following system:

$$\epsilon y'' + y' + y = 0, \quad y(0) = 0, \quad y(1) = 1. \quad (1)$$



Exact (thick line) and outer (thin line) solution to (1) with $\epsilon = 0.01$.



Error in using the leading-order uniformly-valid solutions with $\epsilon = 0.01$.