

## Problem 25

Consider the initial value problem

$$2y'' + 3y' - 2y = 0, \quad y(0) = 1, \quad y'(0) = -\beta,$$

where  $\beta > 0$ .

- (a) Solve the initial value problem.
- (b) Plot the solution when  $\beta = 1$ . Find the coordinates  $(t_0, y_0)$  of the minimum point of the solution in this case.
- (c) Find the smallest value of  $\beta$  for which the solution has no minimum point.