Problem 36

In each of Problems 29 through 36, find the solution of the given initial value problem, and plot its graph. How does the solution behave as $t \to \infty$?

$$y^{(4)} + 6y''' + 17y'' + 22y' + 14y = 0; \qquad y(0) = 1, \quad y'(0) = -2, \quad y''(0) = 0, \quad y'''(0) = 3$$