Integral Curves: Linear Equations

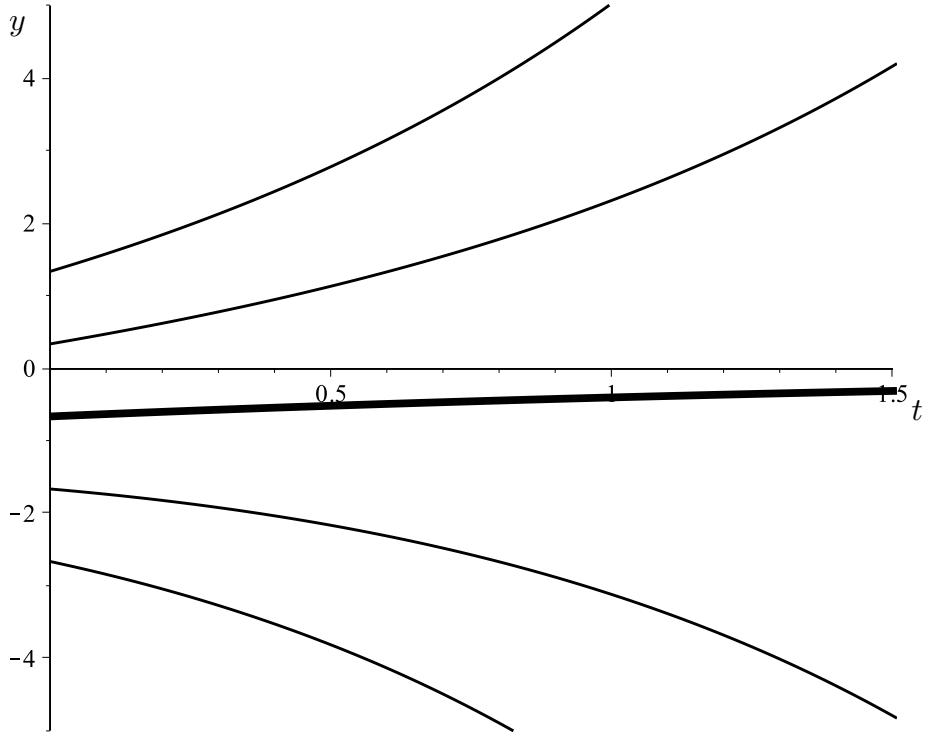
In class we found that the solution to the equation

$$\dot{y} - y = e^{-t/2}$$

is

$$y(t) = Ce^t - \frac{2e^{-t/2}}{3}. \tag{1}$$

Here are some integral curves of the solution.



Graphs of (1) for $C = 0$ (equilibrium solution, thick curve), ± 1, and ± 2.

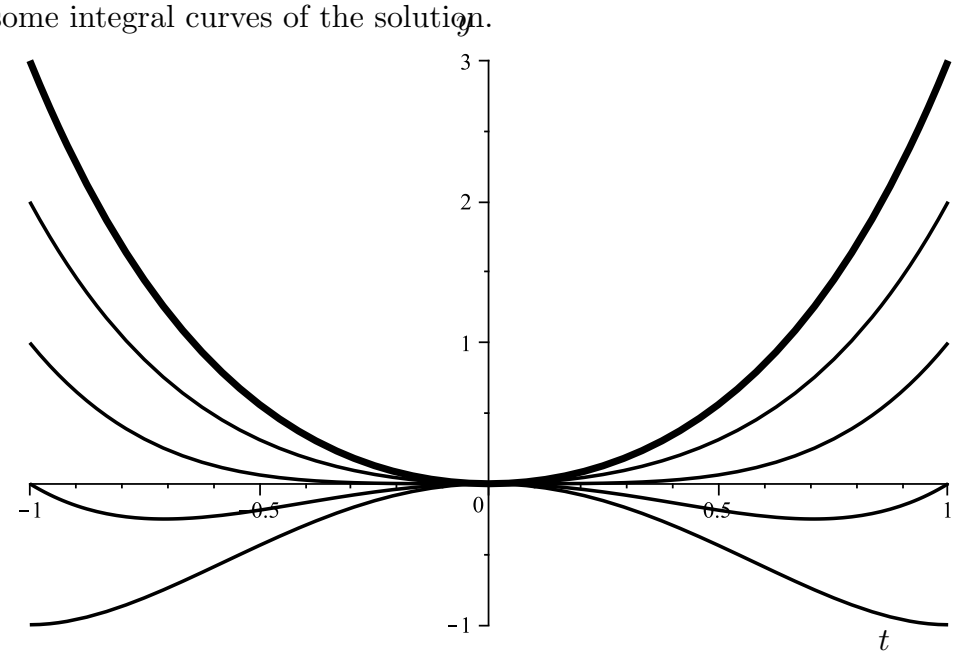
In class we found that the solution to the equation

$$t\dot{y} - 2y = 2t^4$$

is

$$y(t) = t^4 + Ct^2. \tag{2}$$

Here are some integral curves of the solution.



Graphs of ('`intvar`') for $C = 0$, ± 1, and -2, and 2 (thick curve).