

# Integral Curves

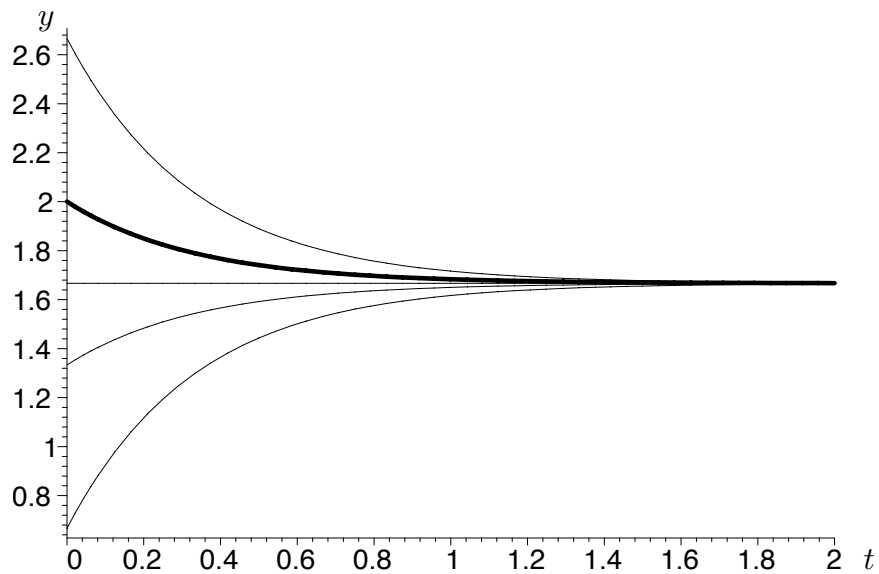
The solution to the system

$$\dot{y} + 3y = 5$$

is

$$y(t) = Ae^{-3t} + \frac{5}{3}. \tag{1}$$

Here are some integral curves of the solution.



Graphs of (1) for  $A = -1, -1/3, 0, 1/3$  (dark line), and 1.

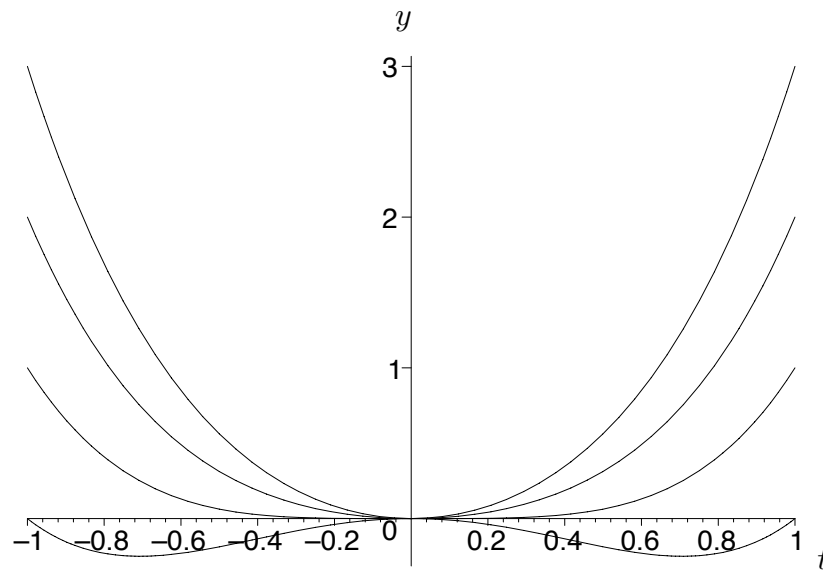
In class we found that the solution to the system

$$\dot{y} - \frac{2}{t}y = 2t^3$$

is

$$y(t) = t^4 + Ct^2. \quad (2)$$

Here are some integral curves of the solution.



Graphs of (2) for  $C = 0, \pm 1$ , and  $\pm 2$ .