

Getting Familiar with the Isoclines Applet

Open the *Isoclines* Applet.

1. In the applet call up the differential equation $y' = y^2 - x$, the same as for the video you have just watched. Display some isoclines, for instance $m = -2, -1, 0$ (nullcline), 1 and 2. Display some integral curves. Take the time to familiarize yourself with the applet!
2. Display some of the integral curves through the points $(0, y_0)$, with $y_0 \leq 0.5$. What do you notice? And then if $0.5 \leq y_0 \leq 1$?
3. Now do the same for another equation, e.g. $y' = y^3 - 3y - x$. Are there similar phenomena?

Some of the features you will discover are discussed in the next few sections.

MIT OpenCourseWare
<http://ocw.mit.edu>

18.03SC Differential Equations
Fall 2011

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.