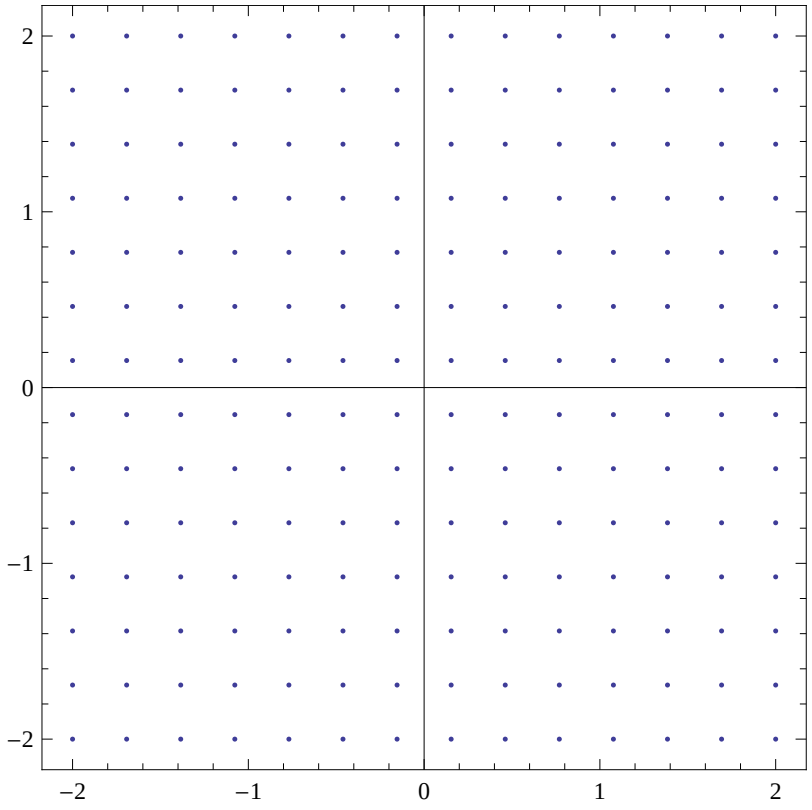
1. Sketch the slope field for the differential equation $\frac{dy}{dx} = -\frac{x}{y}$, and graph some of the solutions $y = \pm\sqrt{C - x^2}$.



2. On the slope field (Fig. 1) for the differential equation $\frac{dy}{dt} = y^2 - y - 2$:
   (a) Sketch the three solutions which have initial conditions $(0, 0)$, $(0, -2)$, and $(0, 1.5)$.
   (b) Find any equilibrium solutions, and decide if they are stable or unstable.

3. On the slope field (Fig. 2) for the differential equation $\frac{dy}{dt} = t - y$:
   (a) Sketch the two solutions which have initial conditions $(-3, 3)$ and $(0, -3)$.
   (b) Guess one linear solution to the differential equation and check that it works.

Figure 1: Slope field for $\frac{dy}{dt} = y^2 - y - 2$.

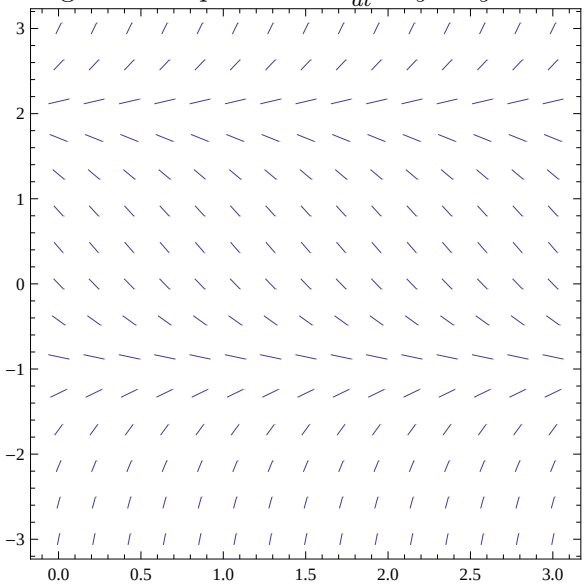


Figure 2: Slope field for $\frac{dy}{dt} = t - y$.