

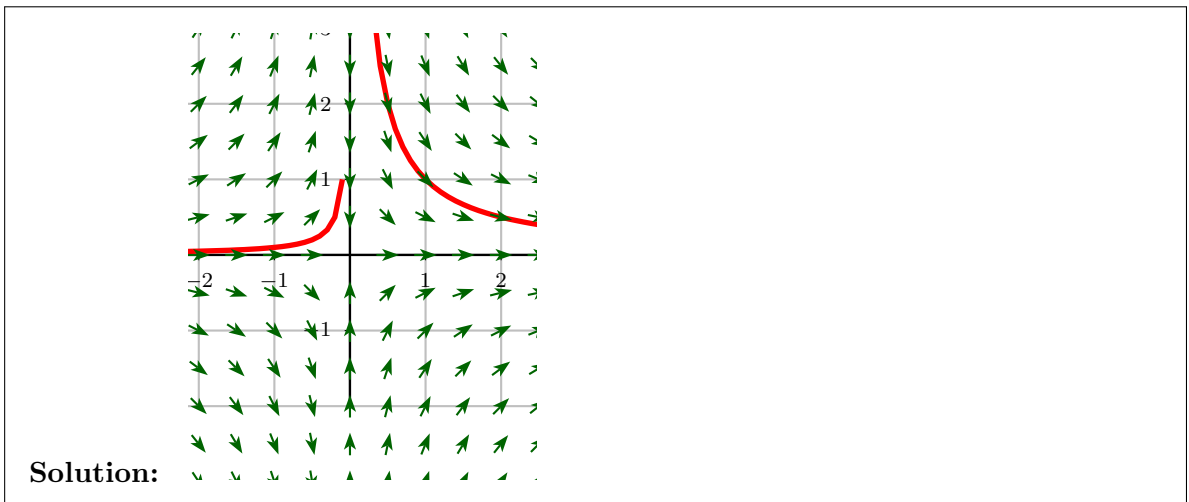
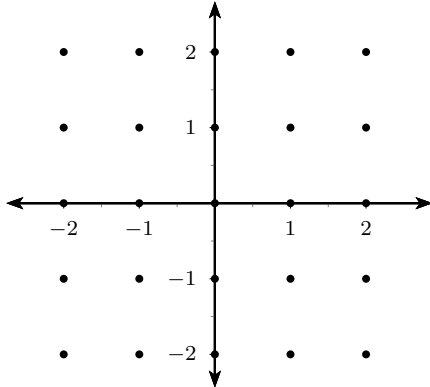
Math 520

More Differential Equations & Slope Fields

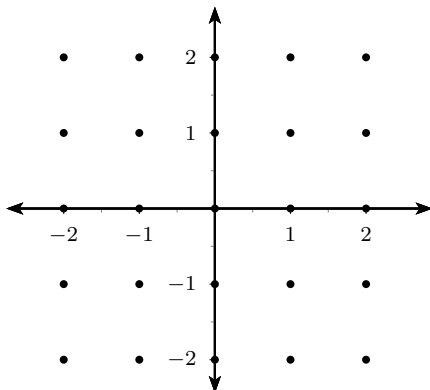
§§7.1-7.2

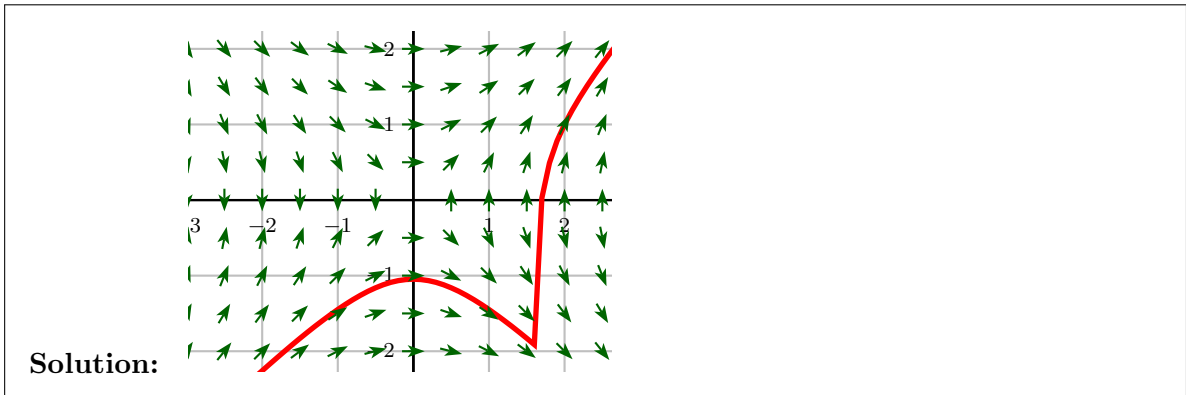
1. Sketch the slope field and draw a solution through the given point.

(a) $y' = -\frac{y}{x}$; $(1, 1)$.

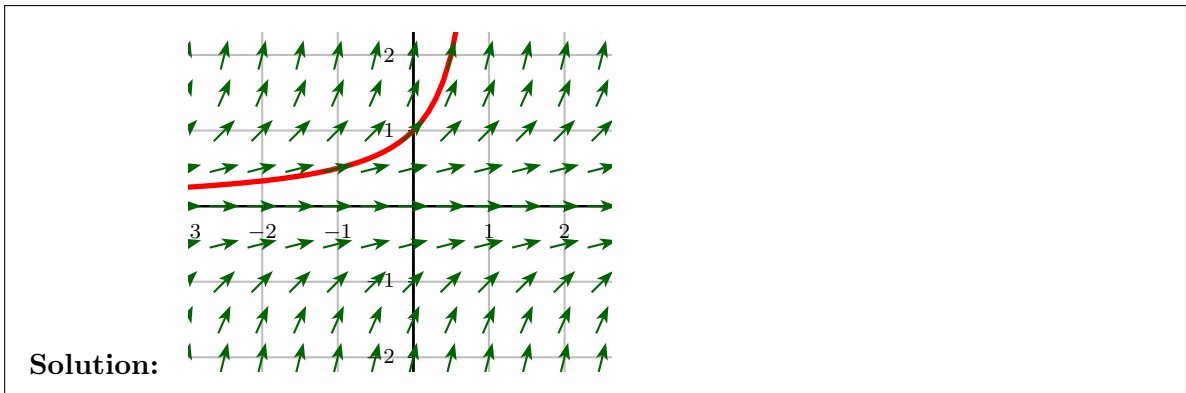
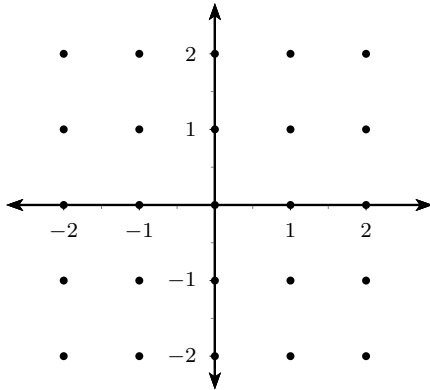


(b) $y' = \frac{x}{y}$; $(2, 1)$





(c) $y' = y^2$ $(0, 1)$.



2. Solve the differential equation $y' = x^2 - x - 1$ with the initial condition $(1, 0)$.

Solution: $y = \frac{x^3}{3} - \frac{x^2}{2} - x + \frac{7}{6}$

3. Solve the differential equation $y' = \frac{1}{2x-1}$ with the initial condition $(1, 1)$.

Solution: $y = \frac{1}{2} \ln(2x-1) + 1$