Slope Fields

1. Draw the slope fields for the following differential equations:

   (a) $\frac{dy}{dt} = 1$.

   (b) $\frac{dy}{dt} = t$.

   (c) $\frac{dy}{dt} = y$.

   (d) $\frac{dy}{dt} = \frac{-t}{y}$.

2. Draw the slope field for the differential equation $\frac{dy}{dt} = y - 1$. Sketch two solutions to the equation.

3. Which of the following is a solution to $\frac{dy}{dt} = y - 1$?

   (a) $y = Ce^t$

   (b) $y = Ce^t - t$

   (c) $y = Ce^{-t} - 1$

   (d) $y = Ce^t - 1$

   (e) $y = Ce^t + 1$

4. Which of the following is a solution to $y'' - y' - 6y = 0$?

   (a) $y = Ce^t$.

   (b) $y = C \sin 2t$.

   (c) $y = 5e^{3t} + e^{-2t}$.

   (d) $y = e^{3t} - 2$.