Exercises:

1. Find the differential equation for the function:

   (a) $y = \sin(x)$

   (b) $y = (x-2)^4$

   (c) $y = \ln(x^2+1)$

2. Draw the slope field for these functions at the points: (-1,-1), (0,-1), (1,-1), (-1,0), (0,0), (1,0), (-1,1), (0,1), and (1,1).

   (a) $y = x^2$

   (b) $y = \dfrac{(x+2)}{(x-1)(2x+1)}$

   (c) $y = \sec(2x)$