

## Problems - HW 3

Tuesday, September 1

1. Consider the equation  $x^2 - \sin(xy) - y^2 = 4 - \pi^2$ . Which of the following points are on the graph of the equation and, for those that are, what is the slope of the graph at that point?
  - (a)  $(0, 0)$
  - (b)  $(2, \pi)$
2. Consider the differential equation  $y' = -x^2y$ .
  - (a) Find the general solution.
  - (b) Find the particular solution that passes through the point  $(1, 1)$ .