

Name:

1. (3pts) Give the general solution to the following differential equation:

$$y' = \frac{y \cos x}{1 + y^2}$$

2. (4pts) Find the solution to the following initial value problem:

$$\begin{aligned}(x^2 + 1)y' &= xy \\ y(1) &= e^2\end{aligned}$$

3. (3pts) Match each differential equation with its direction field. (No need to show your work.)

(a) $y' = 3x - y$ corresponds to picture number:

(b) $y' = 2y - 1$ corresponds to picture number:

(c) $y' = xy$ corresponds to picture number: