

Name:

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

$$y' = \frac{y-1}{\tan x}$$

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

$$\begin{aligned}\frac{y'}{\ln(x^2)} &= xy \\ y(1) &= e^3\end{aligned}$$

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

(a) $y' = xy^2$ corresponds to picture number:

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

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