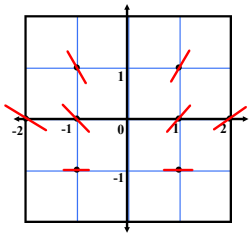
AP Test Question 2006 Part B - No Calculator Allowed

5) Consider the differential equation $\frac{dy}{dx} = \frac{1+y}{x}$, where $x \neq 0$.

a) On the axes provided, sketch a slope field for the given differential equation at the eight points indicated.



Consider the differential equation $\frac{dy}{dx} = \frac{1+y}{x}$, where $x \neq 0$.

b) Find the particular solution $y = f(x)$ to the differential equation with the initial condition $f(-1) = 1$ and state its domain.

$y = 2(-x) - 1$ or **$y = -2x - 1$**

domain: $(-\infty, 0)$