Problem 1: (6 points) If \( y^2 + x^2 y = e^x \), find \( y' \) at (0,1).

Problem 2: (6 points) If \( y = \tan^{-1} \sqrt{x^2 + 1} \), find \( \frac{dy}{dx} \).

Problem 3: (7 points) If \( \sin xy = x \), find \( \frac{d^2y}{dx^2} \) at (0,1).

Problem 4: (6 points) If \( y = \sqrt{x - 1} \) find \( y^{(20)}(2) \).
Problem 1: (6 points) If $xy^2 + y = e^x$, find $y'$ at (0,1).

Problem 2: (6 points) If $y = \cot^{-1}\sqrt{x^2 + 1}$, find $\frac{dy}{dx}$.

Problem 3: (7 points) If $\cos xy = x$, find $\frac{d^2 y}{dx^2}$ at (1,0).

Problem 4: (6 points) If $y = \sqrt{x + 1}$ find $y^{(20)}(0)$. 