1. (10 points) Solve the following initial value problem:

$$
x d y-y d x-\left(1-x^{2}\right) d x=0, \quad y(1)=1
$$

2. (7 points) Solve the following initial value problem:

$$
\frac{d y}{d x}=1-x+y^{2}-x y^{2}, \quad y(0)=1 .
$$

