Find the general solutions to the following differential equations.

1. 

\[ x^2 \frac{dy}{dx} = -y^2 - x^2 y^2 \]

2. 

\[ \frac{dy}{dx} = x - \frac{x}{1 + x^2 y} \]

3. 

\[ -x \frac{dy}{dx} + y = \frac{y^2}{x^{3/2}} \]

Hint: this is an equation of Bernoulli type. It can be made linear by substituting \( u = 1/y \).