

1. Find the general solution to the following differential equation.

$$y' = y^2 + 2xy^2$$

2. Using your answer from the previous problem, solve the initial value problem:

$$y' = y^2 + 2xy^2, \quad y(0) = 2$$

3. Find the orthogonal trajectories of the family of curves below.

$$y = cx^2$$

Q: What has four wheels and flies?