- 1. [15 points] Find real-valued solutions to each of the following, as indicated. Where possible, find explicit solutions.
 - **a.** [8 points] $\ln(1/y^2) \frac{dy}{dt} = r y$, y(0) = e.

b. [7 points] Find the general solution to $t\frac{dy}{dt} = ry + t^2$.