Exercise 1.4.1. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = 1 - y^2$$

Exercise 1.4.2. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = 1 - y^2$$

Exercise 1.4.3. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = y^3 + y^2 - 6y$$

Exercise 1.4.4. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = \frac{1}{1 + y^2}$$

Exercise 1.4.5. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = (2y - y^2)e^{-y}$$

Exercise 1.4.6. Perform a qualitative analysis (determine equilibrium solutions, sketch slope field, determine stability of equilibrium points) of the ODE

$$\frac{dy}{dt} = \cos(y)$$