1. The logistic population model

$$x' = x(1-x)$$

is a Bernoulli equation. Use this fact to determine  $\boldsymbol{x}(t)$  explicitly.

2. Determine the general solution (in implicit form) of the exact  $\ensuremath{\mathsf{ODE}}$ 

$$\left(\frac{y}{x} + 6x\right) + (\ln x - 2)y' = 0.$$