# MA114 Summer 2018
# Worksheet 27 – Separable Differential Equations
# 7/31/18

1. Use separation of variables to find the general solutions to the following differential equations.

   a) $y' + 4xy^2 = 0$

   b) $\sqrt{1-x^2}y' = xy$

   c) $(1+x^2)y' = x^3y$

   d) $\sqrt{1+y^2}y' + \sec(x) = 0.$

2. Solve the initial value problems.

   a) $\dfrac{dL}{dt} = kL^2 \ln t, L(1) = -1$, where $k$ is a constant.

   b) $\dfrac{dP}{dt} = \sqrt{Pt}, P(1) = 2$