## $\begin{array}{cc} 1.1 & \text{Linear Equations; Method of Integrating Factors} \\ \end{array}$

A first order linear equation is an equation that is only linearly dependent on y. Its general form is

$$\frac{dy}{dt} + p(t)y = g(t) \text{ or } P(t)\frac{dy}{dt} + Q(t)y = G(t)$$