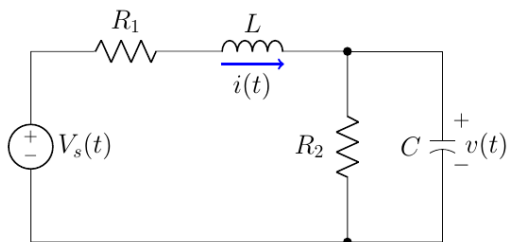
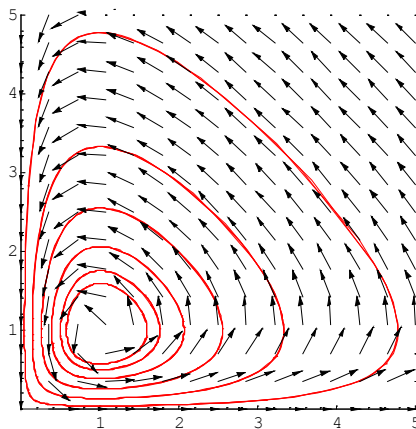
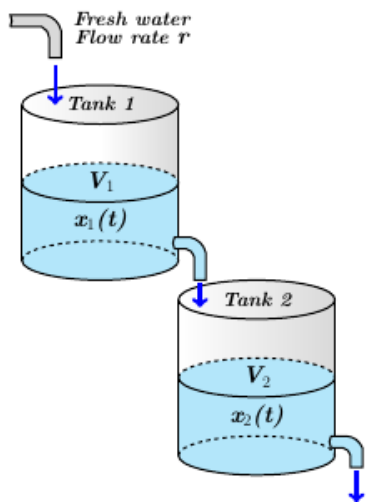
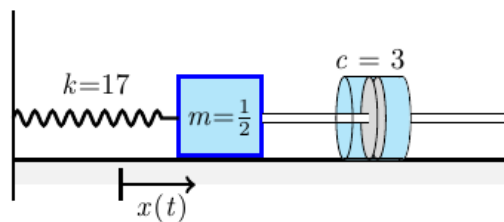
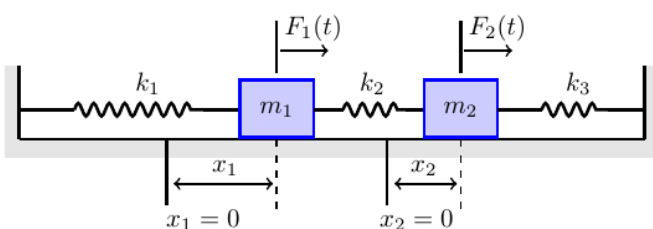


DIFFERENTIAL EQUATIONS

By: **Fred Khoury, MS**



$$\mathcal{L}(f)(s) = F(s) = \int_0^{\infty} f(t)e^{-st} dt \quad \begin{cases} m_1 x_1'' = -(k_1 + k_2)x_1 + k_2 x_2 \\ m_2 x_2'' = k_2 x_1 - (k_2 + k_3)x_2 \end{cases} \quad L \frac{dI}{dt} + RI + \frac{1}{C}Q = E(t)$$

$$L \frac{d^2 Q}{dt^2} + R \frac{dQ}{dt} + \frac{1}{C}Q = E(t) \quad (1-x^2)y'' - 2xy' + n(n+1)y = 0 \quad P_n(x) = \frac{1}{2^n} \sum_{k=0}^{n/2} \frac{(-1)^k (2n-2k)!}{k!(n-k)!(n-2k)!} x^{n-2k}$$

