Example

$$\frac{\partial p}{\partial t} = \frac{1}{\alpha} \frac{\partial^2 p}{\partial x^2} \frac{P_1}{P_{1n+1}}$$

$$p(x,0) = P_{init} = 0.0$$

$$p(0,t) = P_{i} = 1000.0 P_{5i}$$

$$p(L,t) = P_{2} = 0.0$$