Additional Exercises:

1. Rewrite the following process

$$\frac{dz}{dt} = 5 \cdot u \cdot z - \sqrt{d}$$

in terms of perturbation variables, z^p, u^p and d^p, with the steady state corresponding to $u_{ss}=1$ and $d_{ss}=0$.

2. Given the process model,

$$\frac{d}{dt} y + 3 \cdot u \cdot y = e^{-2 \cdot t} + 2$$

Obtain a linearized model in terms of the perturbed variables, y^p and u^p with steady state corresponding to $u_{ss}=1$.