$$\frac{dh}{dt} = \alpha_1 (1 - h - d) - \beta_1 h \;; \qquad \frac{dd}{dt} = \beta_2 (1 - h - d) - \alpha_2 d$$

$$\frac{dh}{dt} = 0 \;) \Rightarrow \; \alpha_1 (1 - h - d) = \beta_1 h \;\rightarrow\; h = \frac{\alpha_1 (1-d)}{\alpha_1 + \beta_1} = \frac{\alpha_1 (1-d)}{\alpha_1 + \alpha_1 K}$$

$$\alpha_1 - \alpha_1 h - \alpha_1 d = \beta_1 h$$

$$\boxed{h = \frac{1-d}{1+K}}$$

$$\frac{dd}{dt} = \alpha_2 K \left(1 - \frac{1-d}{1+K} - d\right) - \alpha_2 d = \alpha_2 K - \frac{\alpha_2 K (1-d)}{1+K} - \alpha_2 K d - \alpha_2 d =$$

$$= \frac{\alpha_2 K (1+K) - \alpha_2 K (1-d) - (\alpha_2 K d + \alpha_2 d)(1+K)}{1+K} =$$

$$= \frac{\cancel{\alpha_2 K} + \alpha_2 K^2 - \cancel{\alpha_2 K} + \cancel{\alpha_2 K d} - \cancel{\alpha_2 K d} - \alpha_2 K^2 d - \alpha_2 d - \alpha_2 K d}{1+K} =$$

$$= \frac{\alpha_2 \left(K^2 - (K^2 + K + 1) d\right)}{1+K}$$

$$\left.\begin{aligned} K &= \frac{\beta_2}{\alpha_2} \\ \tau_2 &= \frac{1}{\alpha_2 + \beta_2} \end{aligned}\right) \Rightarrow \quad \beta_2 = K \alpha_2 \qquad \tau_2 = \frac{1}{\alpha_2 (1+K)} \;) \Rightarrow \quad \alpha_2 = \frac{1}{\tau_2 (1+K)} \quad \Rightarrow$$

$$) \Rightarrow \; \dot{d} = \frac{K^2 - (K^2 + K + 1) d}{\tau_2 (1+K)^2} = \frac{\frac{K^2}{K^2 + K + 1} - d}{h_\infty \tau_2 (1+K)^2} =$$

$$= \frac{h_\infty K^2 - d}{h_\infty \tau_2 (1+K)^2}$$