

Problem 1.

$$b) \frac{dH}{dt} = H \left( \frac{0,4}{400} (400 - C - H) - 0,2 - 0,1 \right)$$

$$\frac{dH}{dt} = H (0,4 - 0,001(C - 0,001H - 0,3)) = H (0,1 - 0,001(C+H)) \quad (1)$$

$$\frac{dC}{dt} = C \left( \frac{B_c}{N} (N - C - H) - \delta_c - \alpha_c \right) = C \left( \frac{0,45}{400} (400 - C - H) - \frac{1}{7} - \frac{1}{10} \right) =$$

$$= C (0,45 - 0,001125C - 0,001125H - \frac{1}{7} - \frac{1}{10}) = C (0,001125(-C-H) + 0,207142586) \quad (2)$$

$$(1) = 0$$

$$H \left( -\frac{C+H}{400} + 0,1 \right) = 0$$

$$H = 0 \quad \vee \quad 0,001(C+H) = 0,1$$

$$C+H = 100$$

$$H = 100 - C$$

$$(2) = 0$$

$$C (0,001125(-C-H) + 0,207142586) = 0$$

$$C = 0 \quad \vee \quad -C-H = -184,126987$$

$$C = 184,126987 - H$$

$$(0; 0), (100; 0), (0; 184,126987)$$