

4.1 Construct two non-equivalent, contact free C/E-systems Σ and Σ' and bijection $\varepsilon : E_{\Sigma} \rightarrow E_{\Sigma'}$ such that $\forall e_1, e_2 \in E_{\Sigma} : \sigma(e_1, e_2) = \sigma(\varepsilon(e_1), \varepsilon(e_2))$.

4.2 Let Σ be a finite, cyclic C/E-system and let $E_1, E_2 \subseteq E_{\Sigma}$. Show that $\sigma(E_1, E_2) = \omega \Leftrightarrow$ there exists a non-empty process $p : K \rightarrow \Sigma$ such that $p({}^{\circ}K) = p(K^{\circ})$ and $\nu'(p, E_1, E_2) > 0$.

4.3 b) Consider the C/E-system shown in the book

i) Compute the (unweighted) synchronic distance $\sigma(E_1, E_2)$.

ii) Does a weight mapping g exist such that $\sigma_g(E_1, E_2)$ is finite?

4.4 In the four seasons system shown below, represent the following facts:

a) If it is neither summer nor winter, then it is spring or autumn.

b) If it is summer then it is neither winter nor autumn.

