We want to repeatedly read an input on either channel \( c \) or channel \( d \), whichever comes first, and write it on channel \( e \). At each reading, if input is available on both channels, read either one; if it is available on just one channel, read that one; if it is available on neither channel, wait for the first one and read that one (in case of a tie, read either one).

(a)√ Write the specification formally, and then write a program.

§ see book Subsection 9.1.4

(b) Prove

\[
\mathcal{F}_{we} = t^\uparrow ((\mathcal{F}_{rc}) \downarrow (\mathcal{F}_{rd}) + 1)
\]

\[
\forall m, n \mathcal{F}_{we+m+n+1} \leq (\mathcal{F}_{rc+m}) \uparrow (\mathcal{F}_{rd+n}) \uparrow (\mathcal{F}_{we+m+n}) + 1
\]

no solution given