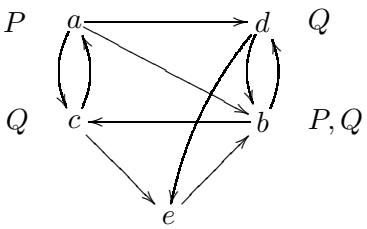
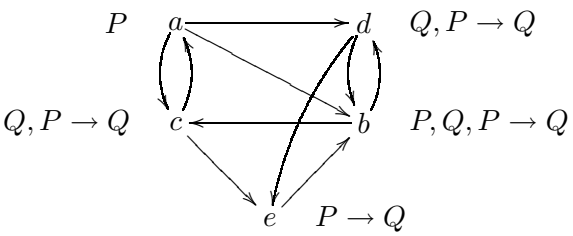
Tik-79.146 **Kevät 2001**
Logiikka tietotekniikassa: erityiskysymyksiä I
Laskuharjoitus 12
Ratkaisut

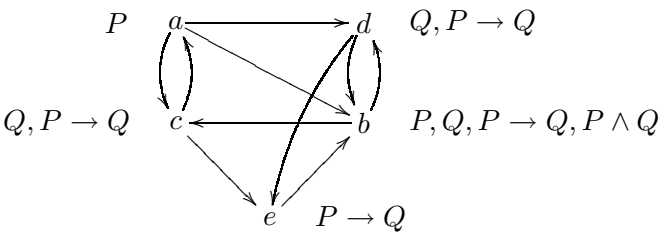
1. $\mathcal{M}$:



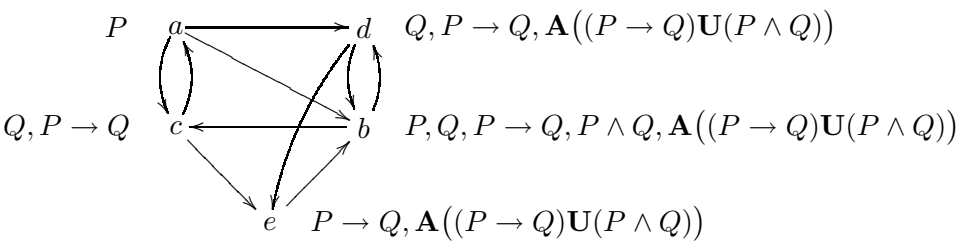
Lisätään $P \to Q$:



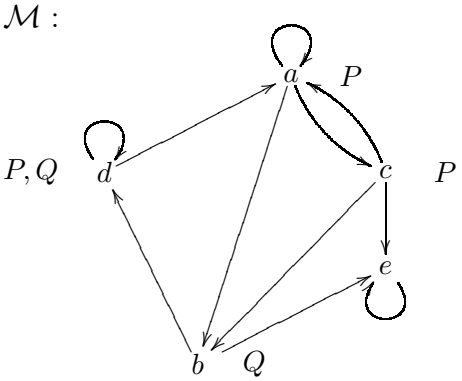
Lisätään $P \wedge Q$:



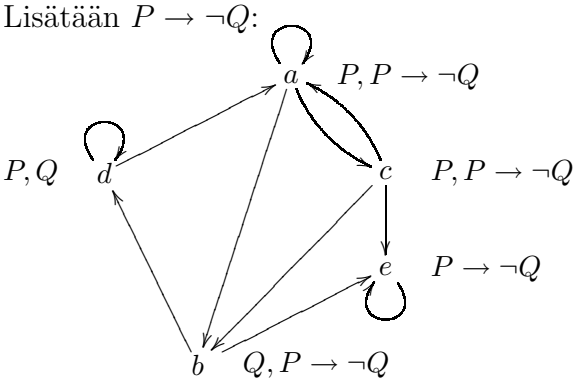
Lisätään $\mathbf{A}\big((P \to Q)\mathbf{U}(P \wedge Q)\big)$:



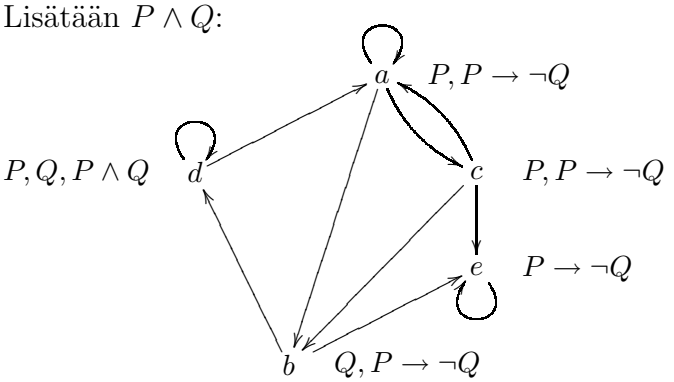
2. $\mathcal{M}$:



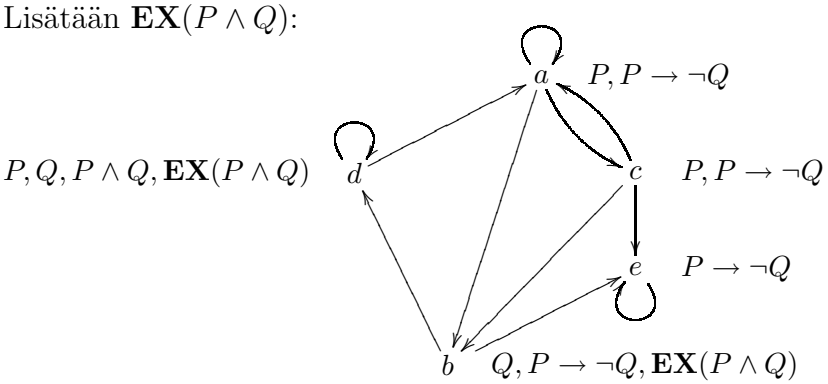
Lisätään $P \rightarrow \neg Q$:



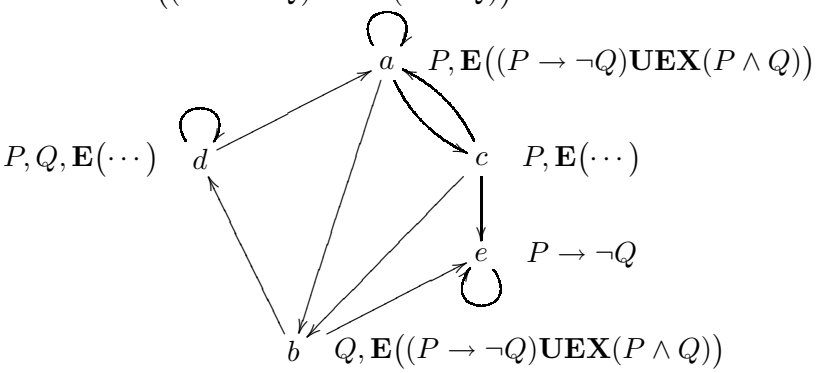
Lisätään $P \wedge Q$:



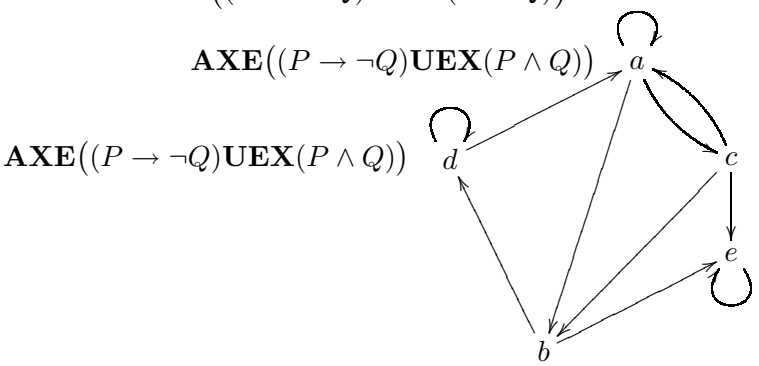
Lisätään $\mathbf{EX}(P \wedge Q)$:



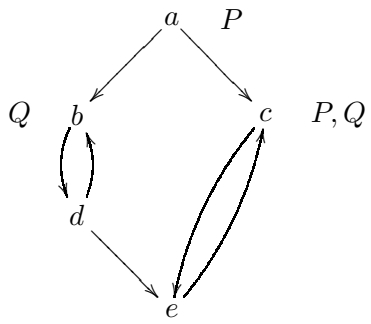
Lisätään $\mathbf{E}\big((P \to \neg Q)\mathbf{UEX}(P \wedge Q)\big)$:



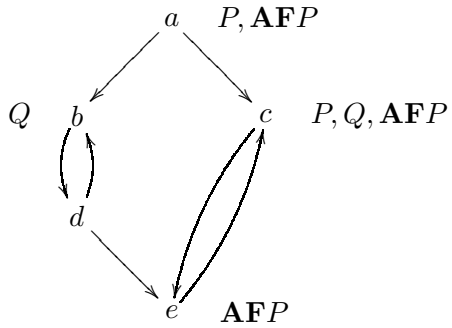
Lisätään $\mathbf{AXE}\big((P \to \neg Q)\mathbf{UEX}(P \wedge Q)\big)$:



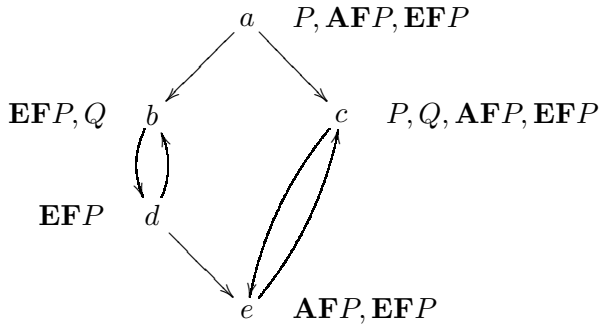
3. $\mathcal{M}$:



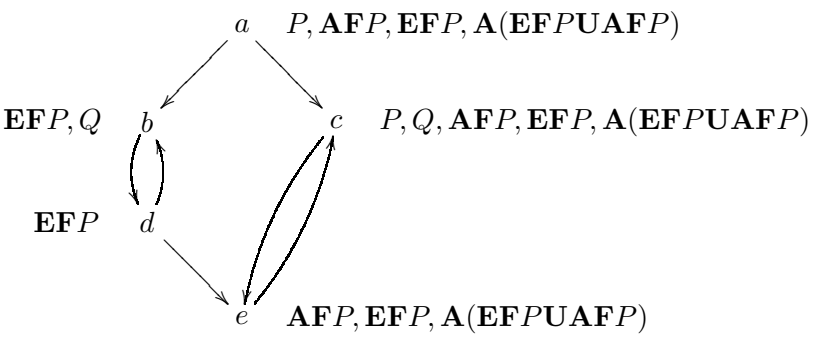
Lisätään $\mathbf{AF}P$:



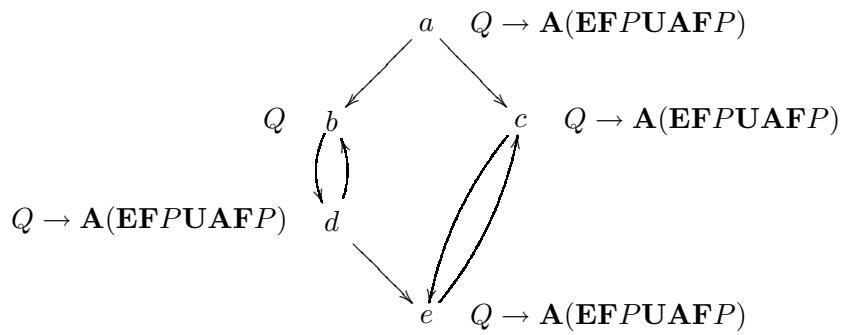
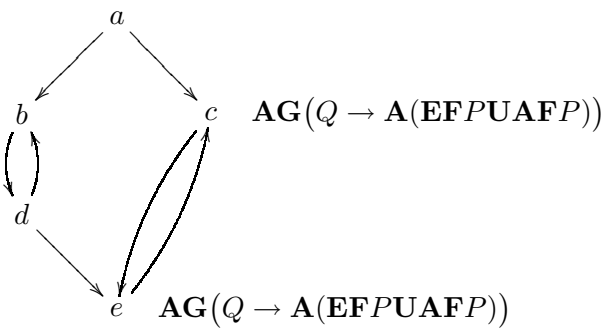
Lisätään $\mathbf{EF}P$:



Lisätään $\mathbf{A}(\mathbf{EF}P\mathbf{UAF}P)$:



Lisätään $Q \rightarrow \mathbf{A}(\mathbf{EF}P\mathbf{UAF}P)$:



Lisätään $\mathbf{AG}\big(Q \rightarrow \mathbf{A}(\mathbf{EF}P\mathbf{UAF}P)\big)$: