

Verification: Homework 4

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- $\llbracket p \rrbracket = \{1, 2, 4, 5\}$
- $\llbracket EGp \rrbracket = \{1, 2, 4, 5\}$ respectively with paths $(12)^\omega, (21)^\omega, 45^\omega, 5^\omega$
- $\llbracket q \rrbracket = \{2, 3, 4\}$
- $\llbracket EXq \rrbracket = \{0, 1, 2, 3, 4\}$ respectively because $0 \rightarrow 3, 1 \rightarrow 2, 2 \rightarrow 3$ and $3 \leftrightarrow 4$
- $\llbracket AGEXq \rrbracket = \emptyset$ because 5 is reachable from every other states
- $\llbracket E((EGp)U(AGEXq)) \rrbracket = \emptyset$ as a direct consequence.
- $\llbracket EXEGp \rrbracket = \{0, 1, 2, 3, 4, 5\}$ because $0 \rightarrow 3, 1 \leftrightarrow 2, 2 \rightarrow 3, 3 \leftrightarrow 4$ and $5 \rightarrow 5$
- $\llbracket A((EXEGp)Uq) \rrbracket = \{0, 1, 2, 3, 4\}$ because 5^ω never satisfies q .