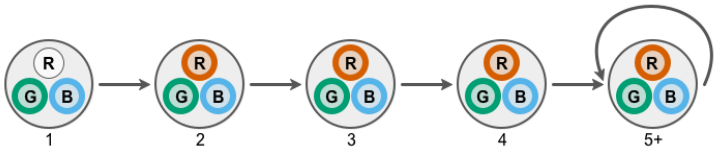
A Instrument

A.1 Trace Satisfaction

A.1.1

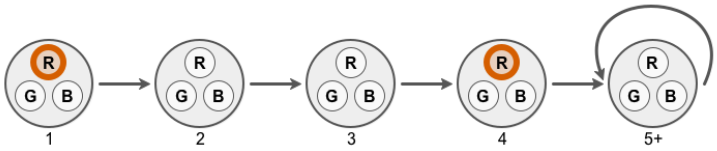
Is the formula Red satisfied by this trace?



Answer: Yes / No

A.1.2

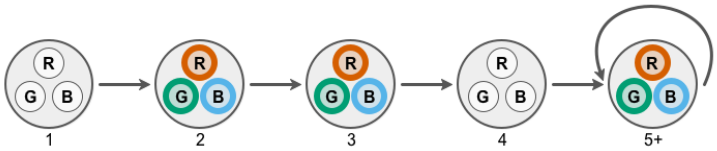
Is the formula after(after(after(Red))) satisfied by this trace?



Answer: Yes / No

A.1.3

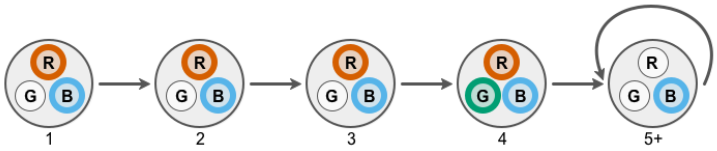
Is the formula always(Red => after(after(after(Red)))) satisfied by this trace?



Answer: Yes / No

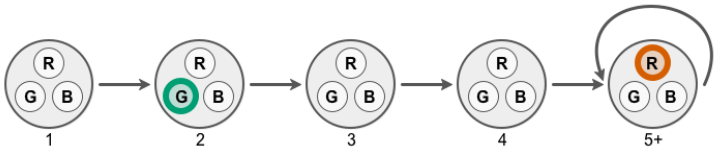
A.1.4

Is the formula ((after Red) until (after Green)) satisfied by this trace?



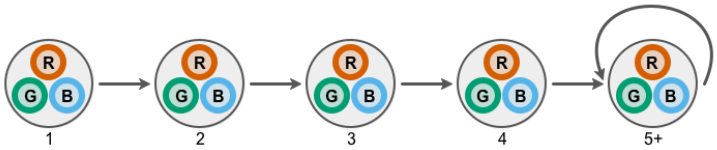
Answer: Yes / No

A.1.5
Is the formula ((eventually Red) and (eventually Green)) satisfied by this trace?



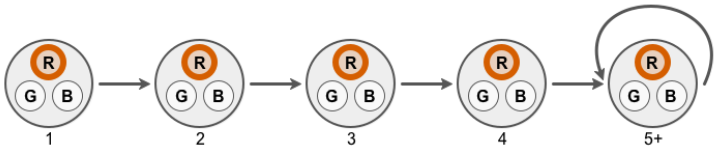
Answer: Yes / No

A.1.6
Is the formula after(after(eventually(Red))) satisfied by this trace?



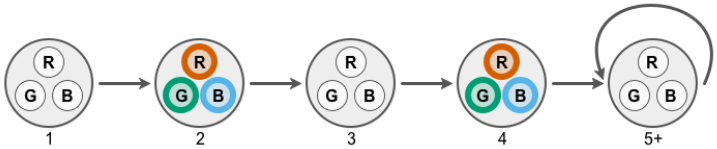
Answer: Yes / No

A.1.7
Is the formula (Red until Blue) satisfied by this trace?



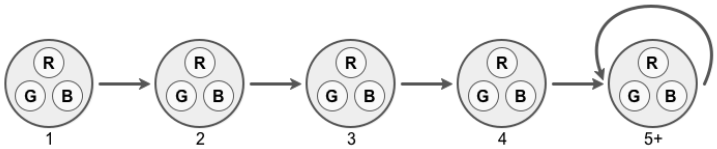
Answer: Yes / No

A.1.8
Is the formula eventually(always(Red)) satisfied by this trace?



Answer: Yes / No

A.1.9
Is the formula always(Red => Green) satisfied by this trace?



Answer: Yes / No

A.2 LTL to English

A.2.1
Translate to English: Red => after(after(after(Red)))

Answer: _____

A.2.2
Translate to English: after(after(eventually(after(Red))))

Answer: _____

A.2.3
Translate to English: ((eventually Red) => (always Blue))

Answer: _____

A.2.4
Translate to English: ((Red until Blue) and always(Red))

Answer: _____

A.2.5
Translate to English: always(Red => (after(not Red) and after(after(Red))))

Answer: _____

A.3 English to LTL

A.3.1
Translate to LTL: Whenever the Red light is on, it is off in the next state and on again in the state after that.

Answer: _____

A.3.2
Translate to LTL: The Red light is on in exactly one state, but not necessarily the first state.

Answer: _____

A.3.3
Translate to LTL: The Red light cannot stay on for three states in a row.

Answer: _____

A.3.4
Translate to LTL: Whenever the Red light is on, the Blue light will be on then or at some point in the future.

Answer: _____

A.3.5
Translate to LTL: The Red light is on for zero or more states, and then turns off and remains off in the future.

Answer: _____