* 1. Can the value of the variable i become strictly greater than 200?

No, the value of I cannot be greater than 200 as there is no such condition where the value of i can exceed 100 in any process. The maximum value can be strictly 100.

* 1. Is it true that no matter what happens (always) is the value of i smaller than or equal to 100?

Yes, the value of I always remains smaller than 100. This is because when the value of i is less than 100, it is incremented by Process 3 and again it is decremented in the by Process 1.

* 1. Is it true that no matter what happens (always) is the value of i strictly smaller than 100?

No, after many transitions the value of i can be equal to 100. By selecting the enabled transitions, we can keep on incrementing the value of i. In this case we select Process 3.

* 1. Is there a run of the system in which i never exceeds 42?

It is difficult to determine which process will be executed next due to the lack of scheduling. The value keeps on incrementing for few transitions and then decrements for next few transitions. At some point the value reaches 42 and decrements. But, after few transitions the value exceeds 42.

* 1. Is it true that no matter what happens (always) is the value of i greater than or equal to 0?

Once the value of i reaches 100, either it is made equal to 0 by Process 2 or else it will be decremented by Process 1. While rest of the time, the value of i is always greater than 0.

