

c)

1. Does the value of the counter change from one experiment to the other, or is it constant? If it is constant, what is the value? Explain why if not constant.

When  $n$  is greater than 10000, the value of the counter change from one experiment to the other. The operation `counter++` and `counter--` are not atomic instructions. If one process's time slice expired before the new value is written back, maybe in the register, this value will not be changed when used by the other process. Therefore, the value of counter is not constant.

2. Is there a range of values for  $n$  where the behavior is different from the behavior in other ranges? Explain why if any.

There is a range of values for  $n$  to make the counter constant. If the process ends before its time slice expired, i.e.  $n$  is not big enough, the value of counter will not be wrong.