1. Answer:

No. Consider the following case.

1. Initially `turn` equals 0.
2. P(1) sets `blocked[1]` to true (line 6), enters the 2nd while loop (line 7), and finds `blocked[0]` false, so skips the 3rd while loop (line 8). Next, P(1) switches out and P(0) switches in.
3. P(0) then sets `blocked[0]` to true (line 6), finds `turn` = 0 (line 7), and enters its critical section (line 12). Next, P(0) switches out and P(1) switches in.
4. P(1) then assigns 1 to `turn` (line 10) and also enters its critical section (line 12).

This "solution" was invented, submitted to a scholarly journal, checked by the editor and one or more referees, and none of them realized the algorithm was flawed. The algorithm was published in the journal and it had to be "retracted" when it was later discovered to be incorrect!

(Harris Hyman, Comments on a problem in concurrent programming control, Communications of the ACM, v.9 n.1, p.45, Jan. 1966)

2. Answer:

a) `wsem` = -1, `rsem` = 0, `x` = 1, `y` = 1, `z` = 1,
b) `z` = 0, `rsem` = -1, others remain no change
c) `z` = -1, others remain no change
d) `wsem` = -2, others remain no change
e) the first writer

Self-test

1. C
2. C
3. A
4. semWait and semSignal
5. A
6. B