Consider the vector \((y[0], y[1], num[0], num[1])\). What possible vector values will be seen by process 0 if it is the first to reach Place A? Explain how each is possible.

Note: It is not expected that you find all possible vectors.

```
shared int y[2] = { 0, 0 };  
shared int num[2] = { 0, 0 };  
process (i) { // There are 2 processes 0 and 1  
  1:  y[i] = 1;  
  3:  y[i] = 0;  
      ... Place A ...  
}
```

The vector \((y[0], y[1], num[0], num[1])\)

- There are 12 possible combinations
- \(y[0]\) must be 0 because of line 3
- \(y[1]\) can be 0 or 1
  - 0 if process 1 hasn't finished line 1 or has finished line 3
  - 1 if process 1 has finished line 1 but not line 3
- \(num[0]\) can be 1 or 2 because of line 2
  - 1 if process 1 finished line 2 before process 0
  - 2 if process 1 finished line 2 after process 0
- \(num[1]\) can be 0, 1, or 2
  - 0 if process 1 has not finished line 2
  - 1 if process 1 finished line 2 before process 0
  - 2 if process 1 finished line 2 after process 0

Possible combinations: \((0, 0, 1, 0), (0, 0, 1, 1), (0, 0, 1, 2), (0, 1, 1, 0), (0, 1, 1, 1), (0, 1, 1, 2), (0, 1, 2, 1), (0, 1, 2, 2)\)