Prob.1.2. State, with as few words as possible, the *weak* transition firing rule for a class of *ordinary* and *pure* Petri nets.

Prob.1.3. For the finite capacity pure net (N, M_0) shown in Fig.p1.3:

(a) Apply the complementary-place transformation to (N, M_0), and find the resulting net (N', M_0'); **(b)** Apply the strict and weak transition rules to (N, M_0) and (N', M_0'), respectively, to find all possible markings and firing sequences. Draw the reachability graphs.

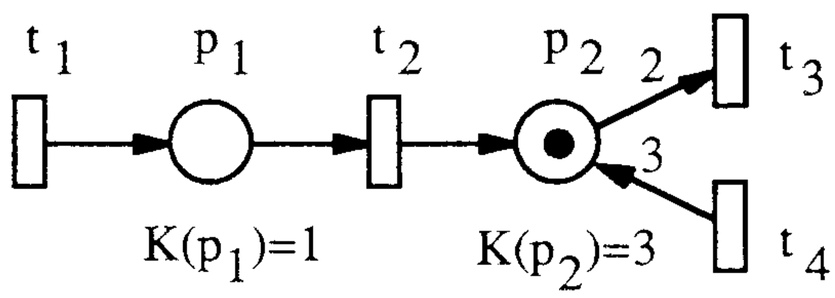

Fig.p1.3 A finite capacity net

Prob.1.4. **(a)** Find a Petri net model of a meaningful system (or situation) that contains a self-loop. **(b)** Transform your net with a self-loop found in (a) into one without by introducing a dummy transition and a dummy place. **(c)** Find the meaningful interpretation of the dummy transition and place introduced in (b). [Notomi]

Prob.1.5. The two nets N3 and N4 in Fig.1.4 for Exercise 1.1 are not pure nets. Transform these nets into pure nets and then apply the four firing rules in Exercise 1.1. State differences before and after the transformation, if any. [Notomi]

Prob.1.6. Find a smallest Petri net that can be used to illustrate a difference between the strict and weak transition rules. [Meng]