Consider the problem of creating a weekly schedule of TA office hours. You are given a list of TA's $t_1, t_2, \ldots, t_n$ and a list of time slots $s_1, s_2, \ldots, s_m$ for office hours. Each TA is available for some of the time slots and unavailable for others. Each time slot s_j must be assigned at most one TA, and every week, each TA t_i is responsible for some positive integer number of office hours h_i.

We want to know if there is a feasible schedule of office hours, *i.e.*, if it is possible to assign time slots to TA's to satisfy all of the problem constraints (each TA gets exactly h_i time slots and each time slot gets at most one TA — some time slots may remain unfilled).

1. Describe precisely how to model this problem as a network flow problem. (Don't forget to specify all edge directions and capacities in your network.)

2. Explain clearly the correspondence between valid assignments of TAs to office hour time slots and valid integer flows in your network above.