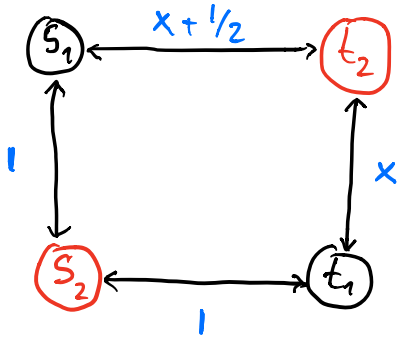
Exercises 2

1: Solve Exercise 1.1, i.e.,
Show by examples that UE ≠ Wardrop Equilibrium when some travel time function are not continuous or not monotone increasing

2: Solve Exercise 1.3, i.e.,
Compute the price of anarchy for the travel time functions $\tau_a(x_a) = x_a^p$, $p \in \mathbb{N}$ fixed

3: Compute the system optimum and the user equilibrium for the following network with two demand pairs:



← travel time function, so $\tau_{t_1t_2}(x_{t_1t_2}) = x_{t_1t_2}$

All streets are bidirected and have the same travel time function in both directions. The demands are

$d_1 = 1$ and $d_2 = 2$