EXERCISE 12:

1. Consider the following network graph where the numbers at the edges denote the edge capacities.

- Find the maximum flow from the source S to the destination D by applying the Edmonds-Karp algorithm. Show the path found during each step from S to D in separate figure.
- Find the minimum cut in the network graph given above.

2. Consider the functions $P_s(t) = 2(\sin(t) + 1)$ and $P_c(t) = \cos(t)^2$.

- Prove that these functions describe benign energy sources and benign energy demand by computing the parameters $\rho_1, \rho_2, \sigma_1, \ldots, \sigma_4$.
- Compute the minimum initial energy $B_0$ such that there is continuous operation in the ideal setting.
- Assume $\eta = 0.4$ and no energy leakage. Is it possible to operate this node continuously?