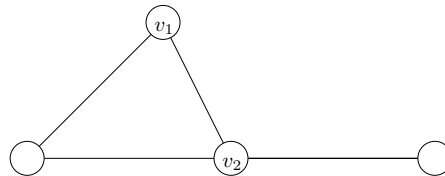# Exercise Sheet 07

Task 1

4 p.

Given the following graph: Compute the betweenness centrality for nodes v_1, v_2.

Task 2

4 p.

Let $G = (V, E)$ be a graph with $|V| = n$ and blue nodes $B \subset V$ with $B = \{u\}$ where $G \setminus B$ is still connected. Let further $N(u) = \{v\}$. Proof:

$$\epsilon \left(dc \left(G \right), dc \left(G \setminus B \right) \right) \leq p_{dc}(v)$$

holds.

Task 3

4 p.

Apply Girvan and Newman's algorithm to the graph in Task 1. Provide the dendrogram.

Task	1	2	3	total
Points	4	4	4	12
reached				