Low complexity challenge

Consider a real network represented with a simple undirected and unweighted graph with n nodes and m links. What is the most **efficient algorithm** for computing the following statistics and what is the **time complexity** of the algorithm?

- the average **node degree** $\langle k \rangle$, network density ρ and node degree distribution p_k,
- the number of **connected components** s and the size of the largest component S,
- the average **distance between the nodes** $\langle d \rangle$ and network diameter d_{max},
- the average node and network **clustering coefficients** $\langle C \rangle$ and C,
- **betweenness centrality** σ_i of a randomly selected node i,
- the **PageRank score** p for each node in a network.

State the type of the algorithm (e.g. DFS or BFS) and its time complexity in terms of n, m and $\langle k \rangle$ for each statistic separately.