report v0.tex

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1 Task 1

1.1 Theory

1.2 Results and discussion

2 Task 2

2.1 Theory

The Erdös-Réyni (ER) random network follows a simple algorithm.

1. Create a network with N nodes
2. For each node n_i, connect n_i to $n_j \neq n_i$ with a probability p.

Given this generation algorithm, the average number of degrees (connections to another node) for any one node is

$$\begin{aligned} \langle k \rangle &= (\#\text{Possible connections }) \cdot (\text{ Prob. of connection}) \\ &= \left(\sum_{n_i \neq n_j}^{N} p \right) \\ &= (N-1)p. \end{aligned} \tag{1}$$

2.2 Results and discussion

3 Task 3

3.1 Theory

3.2 Results and discussion