List of collaborators:

Theorem S. Let G be a graph with at least two vertices. Then two of its vertices have the same degree.

Proof. □

Theorem T. The average degree of the vertices of a tree is less than 2.

Proof. □

Definition. The *star graph on n vertices* has one vertex adjacent to all other vertices (and no other adjacencies).

For the following, fill in the blank and prove your theorem.

Theorem U. The star graph on n vertices has ———————— edges.

Proof. □