Problem 1

Show that \( P \) is the weakest failure detector for Group Membership.

*The failure detector \( D \) is weakest for solving some problem \( A \) (e.g., Consensus or NBAC) if \( D \) provides the smallest amount of information about failures that allows to solve \( A \).*

Problem 2

In this problem we will change the *view-synchronous communication* (VSC) abstraction in order to allow joins of new processes. Answer to the following questions:

1. *Are the properties of VSC (as given in the class) suitable to accommodate the joins of new processes.*
   *Why / Why not?*

2. *Change the properties of VSC, so that they allow for implementations that support the joins of new processes.*
   *Hint: focus on the properties of group membership*

3. *Sketch the changes we need to perform on the Consensus-based (Algorithm II) implementation of VSC in order to support joins.*