

# Worksheet #27: Characterizing Solutions to the Dining Philosophers Problem

Name: \_\_\_\_\_

Netid: \_\_\_\_\_

For the five solutions studied in today's lecture, indicate in the table below which of the following conditions are possible and why:

1. **Deadlock:** when all philosopher tasks are blocked (neither thinking nor eating)
2. **Livelock:** when all philosopher tasks are executing but ALL philosophers are starved (never get to eat)
3. **Starvation:** when one or more philosophers are starved (never get to eat)
4. **Non-Concurrency:** when more than one philosopher cannot eat at the same time, even when resources are available



	Deadlock	Livelock	Starvation	Non-concurrency
<b>Solution 1:</b> synchronized				
<b>Solution 2:</b> tryLock/ unLock				
<b>Solution 3:</b> isolated				
<b>Solution 4:</b> object-based isolation				
<b>Solution 5:</b> semaphores				

