

Report:

1. The asymmetric solution states that every even number philosopher will pick up the left chopstick then the right and odd will pick up right then left. This alternation ensures that every other philosopher will check a chopstick that's already in use. This way the philosopher doesn't accidentally lockdown a chopstick without getting the other chopstick as well.
2. This cannot prevent starvation. One thread may very well freeze waiting for other chopsticks to free up as the philosophers compete for the chopsticks at random.
3. The waiter solution states that the philosophers have to wait on both their left and right chopsticks to free up before eating. A waiter activates to wait on a philosopher so they can wait until they get chopsticks, then when the chopsticks are free they can lockdown both and stop waiting. After eating, that philosopher can then activate the waiter and free their chopsticks then signal others to allow use of the chopsticks then deactivate waiter.

This works because every philosopher is constantly checking if their chopsticks are free and a waiter also ensures chopsticks are passed around without interference. Every philosopher can only eat when the chopsticks are freed and when the waiter properly frees up the chopsticks. The waiter also lets philosopher signal other philosophers to wait until the chopsticks are freed totally to ensure no one accidentally picks up a chopstick at the wrong moment.
4. This cannot prevent starvation. A waiter may be preoccupied giving the chopsticks to other philosophers.
5. Phil may find that neither of the chopsticks is free when the two adjacent philosophers are the ones that received the signal to take their respective chopsticks leaving Phil with none.