Problem 5 - Staleness

1. **Gradient (g[L1, 1])**:
   - No gradients from Learner 2.
   - **Staleness**: (0)
2. **Gradient (g[L1, 2])**:
   - No gradients from Learner 2.
   - **Staleness**: (0)
3. **Gradient (g[L1, 3])**:
   - Learner 2 has calculated (g[L2, 1]).
   - **Staleness**: (1)
4. **Gradient (g[L1, 4])**:
   - Learner 2 has computed (g[L2, 1]).
   - **Staleness**: (1)
5. **Gradient (g[L2, 1])**:
   - Learner 2 sends (g[L2, 1]) at second 2.5. Learner 1 has computed g[L1, 1] and g[L1, 2], which both updated the weights.
   - **Staleness**: (2)
6. **Gradient (g[L2, 2])**:
   - Learner 2 sends g[L2, 2] at second 5. Learner 1 has sent g[L1, 3] and g[L1, 4], which updated the weights.
   - **Staleness**: (2)

Answer:

- (g[L1, 1]): 0 updates
- (g[L1, 2]): 0 updates
- (g[L1, 3]): 1 update
- (g[L1, 4]): 1 update
- (g[L2, 1]): 2 updates
- (g[L2, 2]): 2 updates