6.1 Apply the steady state approximation to species 3 and 6.

After some time upon mixing the reagents 1, 2, and 4, the reaction reaches its steady state phase. At this point the concentration of species 1 is no longer equal to its original concentration but can be expressed in terms of [3], [6], and the initial total concentration of Pd: \( c(Pd) \).

6.2 Write an equation for [1] in terms of [3], [6], and \( c(Pd) \).
6.3 Write the rate equation for the formation of 7 in terms of [6].
6.4 Using the equations you have derived, rewrite \( d[7]/dt \) in terms of only \( c(Pd) \), any of the non-palladium reactants or products ([2], [4], [5], [7]), and rate constants.
6.5 Propose a synthesis of biphenyl (\( \text{C}_6\text{H}_5 \)\(_2 \)) from benzene. You should use the Stille coupling.

Proposed by Anugrah C.