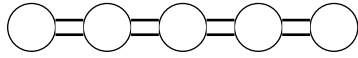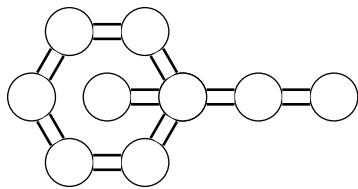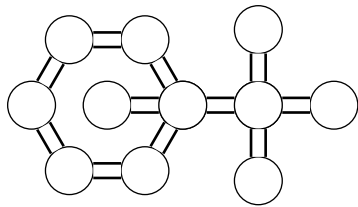The following graphs have no Euler **circuit** (Dragon tour that starts and stops in the same room). Determine an "exhaustive circuit" with the **minimum** number of repeated edges (so a circuit that uses all edges at least once, but possibly some edges more than once).

What is the minimum number of repeated edges?

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What is the basic strategy? Which vertices need to be fixed? How do you fix them?

Why don't you ever need to repeat an edge more than once in a minimal exhaustive circuit?

Label the degrees of each vertex, and then find optimal Eulerizations. Describe the Eulerization by darkening the edges that are repeated (don't add any truly new edges, only repeat old ones, until all the degrees are even). Each of the graphs is connected.