1. All the nodes must be connected directly, so the answer is 100*99/2 = 4950 links

2. We can just put a node in the middle, and every other nodes are connected directly to the node in the middle, then we need 100-1 = 99 links.

3. We can connect all the nodes like a circle, so the minimum diameter is 100/2 = 50.

4. By Moore Bound, d = degree = 3, k = diameter = 5, so we can only have $1 + 3*(2^0+2^1+...+2^4) = 94$ nodes in the graph, it's not possible to have 100 nodes. The answer is no.