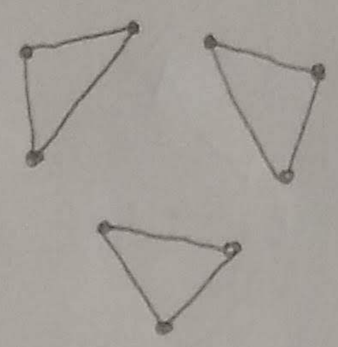
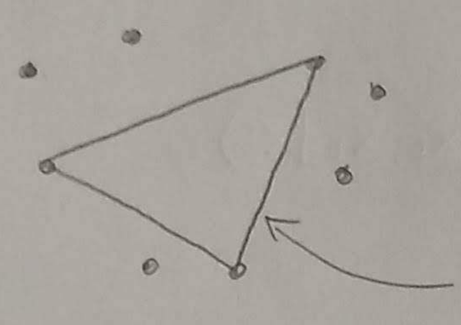
1.4

a) Consider undirected graph of disjoint triangles e.g.



Take its complement i.e. fully connected - triangle edges.

Any maximal clique can only include 1 node in each triangle (since nodes in same triangle are <u>not</u> connected) e.g.



The # of factor nodes = # of maximal cliques

Here, the number of maximal cliques is $\frac{\binom{3}{1}\binom{3}{1}\cdots\binom{3}{1}}{n/3}$

So the number of maximal cliques is $3^{n/3}$

Equivalently $(\sqrt[3]{3})^n$

Let $c = \sqrt[3]{3} > 1$. Then the aforementioned undirected graph has at least c^n vertices.