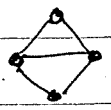
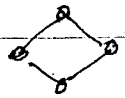
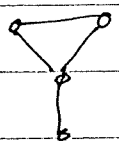
GRAPH THEORY FINAL
7 DEC 1992

1. Reconstruct G if $p(G) = 5$ and

$G_1 \cong$  $G_2 \cong G_3 \cong$  $G_4 \cong G_5 \cong$ 

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2. If $\delta(G) \geq 2$, then G has a cycle of length $\geq \delta(G) + 1$.

3. If G is n-connected for $n \geq 2$, then $L(G)$ [its line graph] is n-connected.

4 If G is connected, then
$$K(G) + 1 \leq K(G \times K_2) \leq 2K(G)$$

5. If T is a tree with even diameter, then there is exactly one vertex in the center of T.

6. If T is a non-trivial tree, the following are equivalent
A. $\operatorname{diam} T \geq 3$
B. T is not isomorphic to $K_{1,p-1}$
C. $\overline{T}$ is connected
D. T contains distinct vertices v_1, v_2, u_1, u_2 with both $v_i u_i \in E(T)$ and $\deg v_i = 1$ for $i = 1, 2$

7. If T is a non-trivial tree not isomorphic to $K_{1,p-1}$ then T is isomorphic to a subgraph of $\overline{T}$.