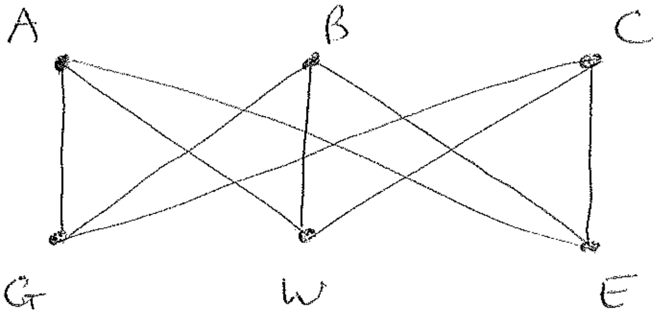
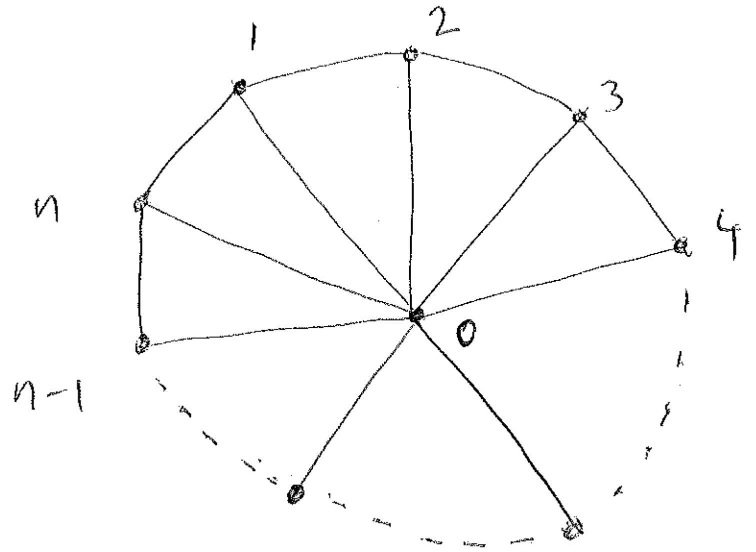
15.1.1

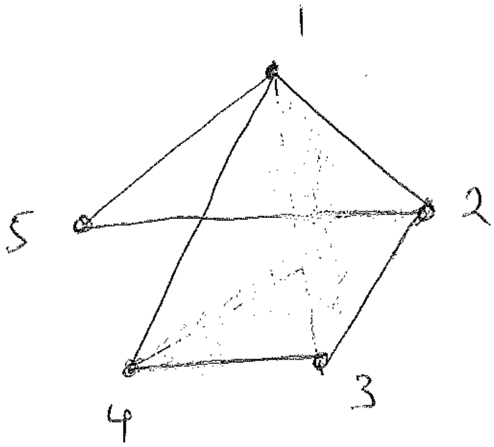


15.1.2

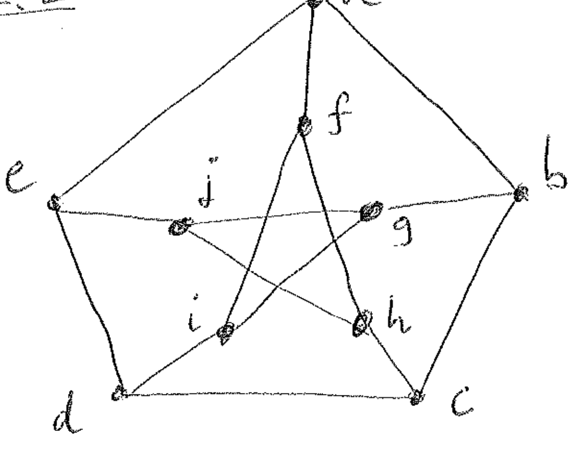


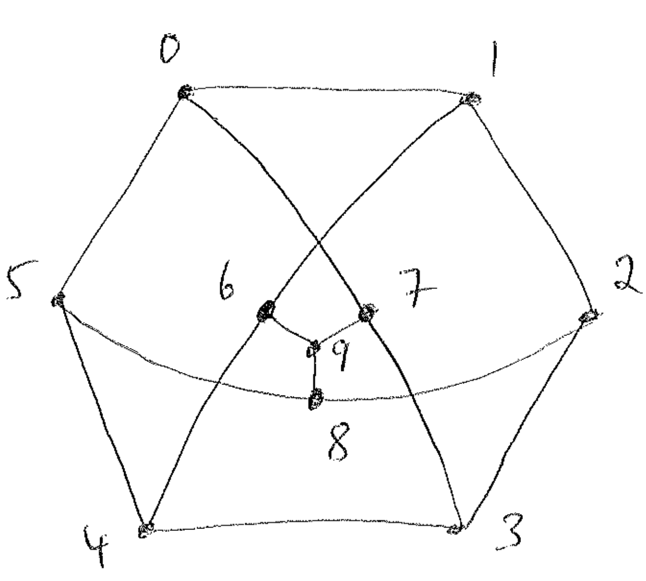
– – – indicates a succession of edges along the cycle.

15.1.4

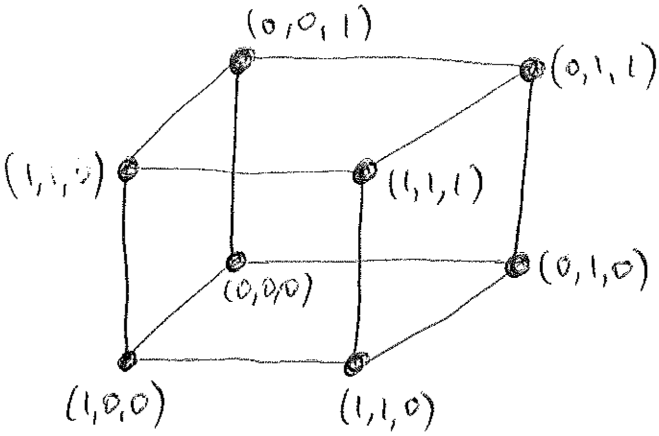


15.2.2

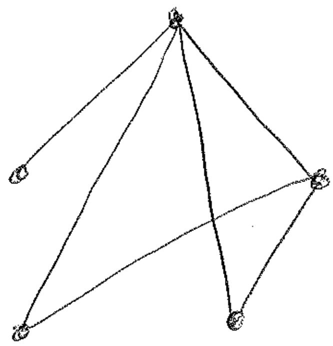




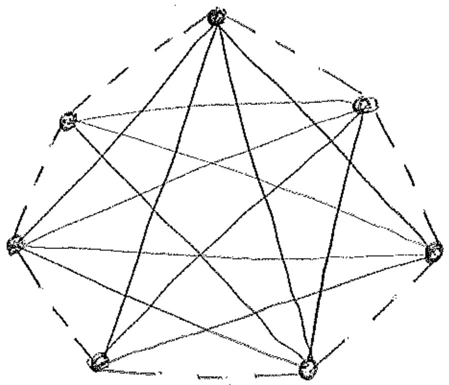
15.2.3

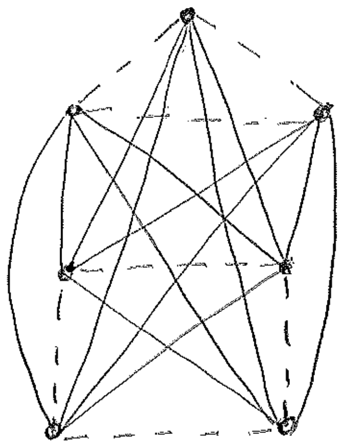


15.3.1 (ii)



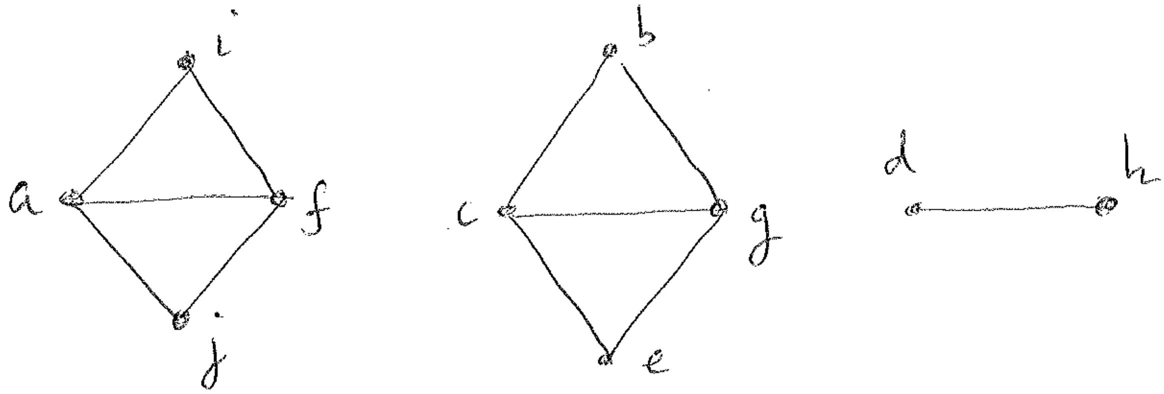
15.3.3



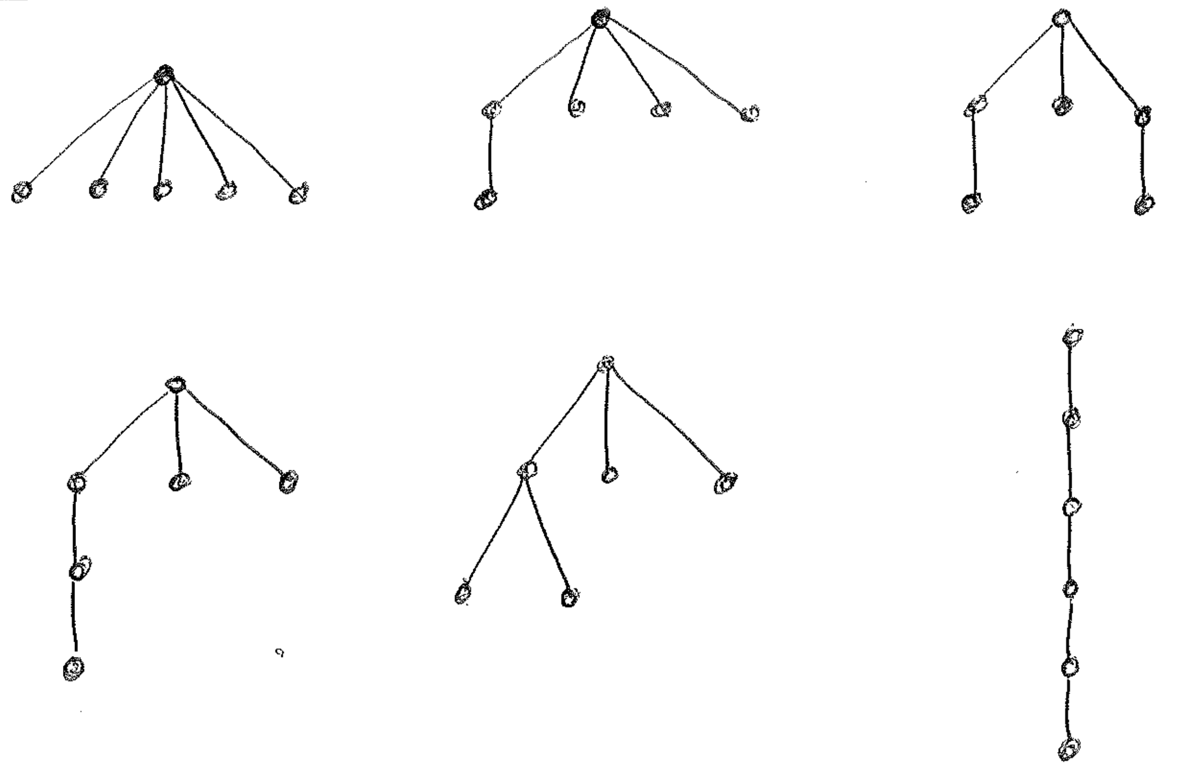


The dashed lines represent $\overline{G}$

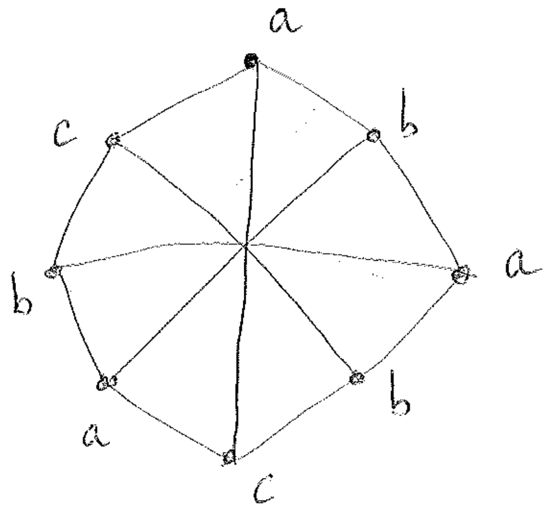
15.4.1

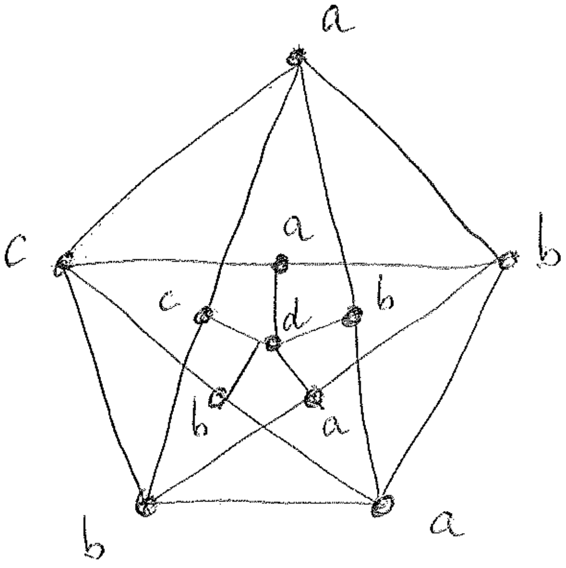


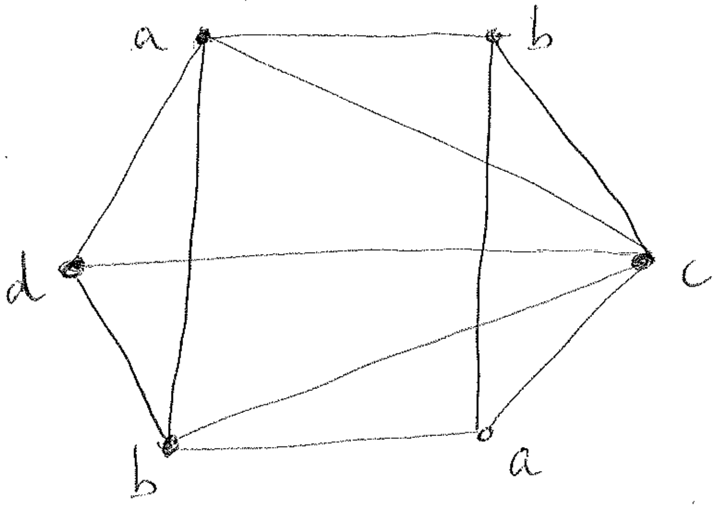
15.5.1



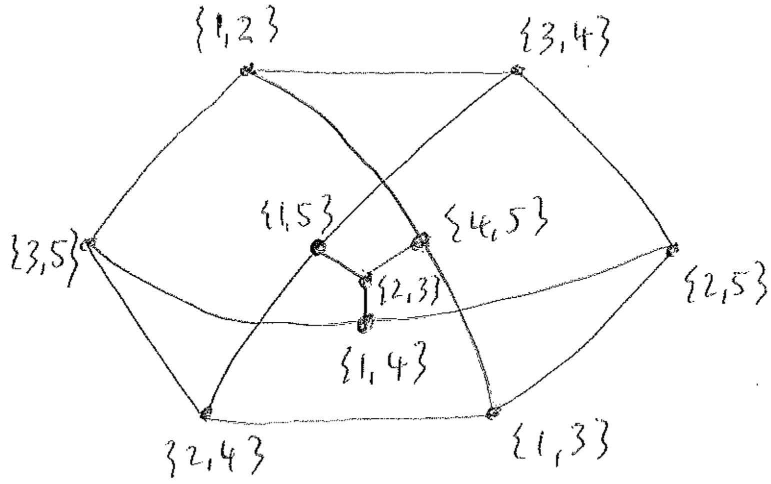
15.6.2

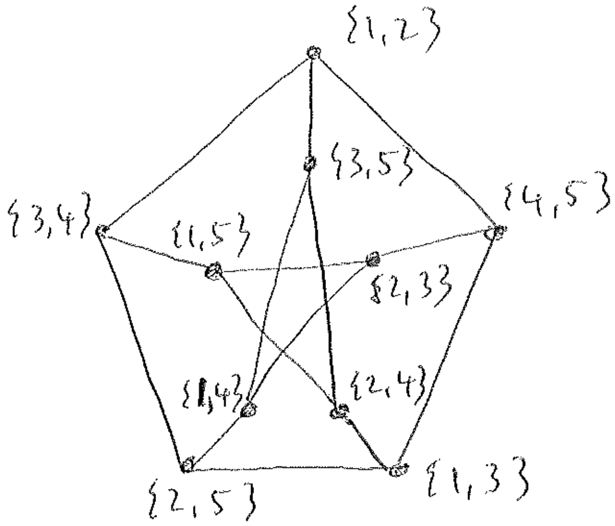






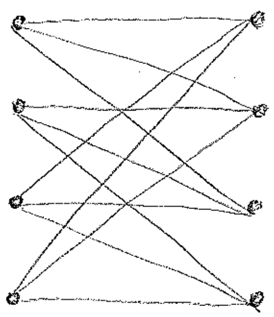
15.8.3

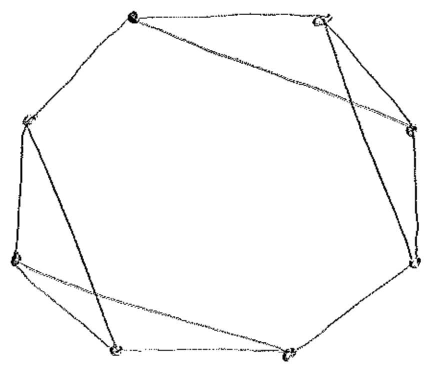




15.8.12

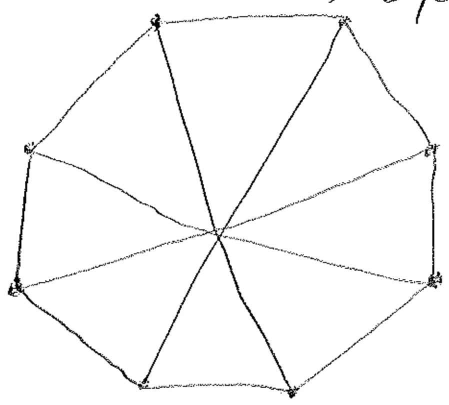
G_1 is bipartite

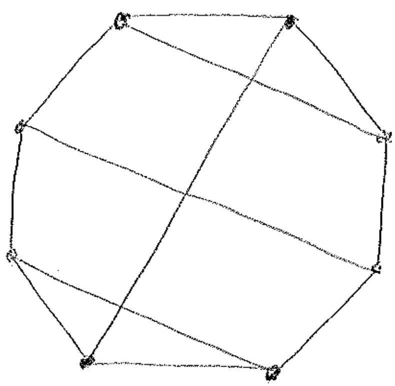




G_2 has 3-cycles, but no 5-cycles and no 4-cycles

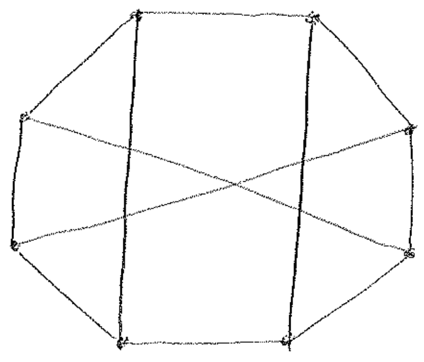
G_3 has 5-cycles, but no 3-cycles





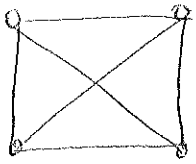
G_4 has 3-cycles, 4-cycles and 5-cycles

G_5 has 4-cycles and 5-cycles, but no 3-cycles

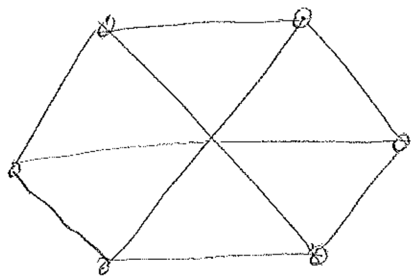


15.8.19

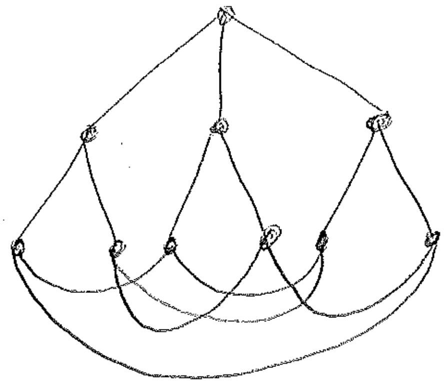
$g = 3$



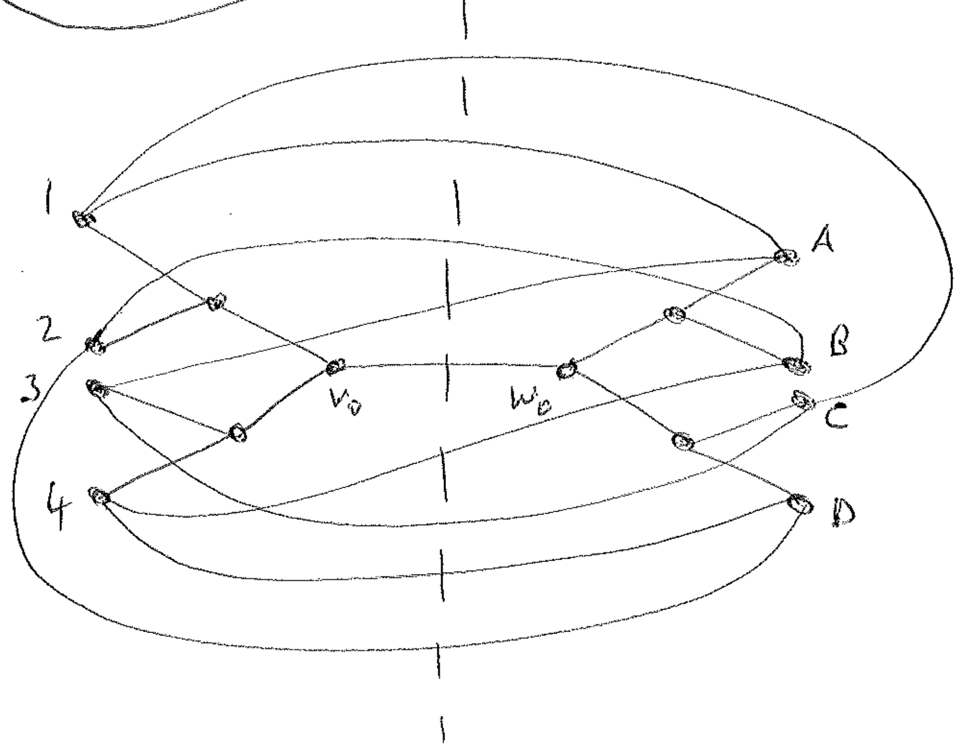
$g = 4$



$g = 5$



$g = 6$



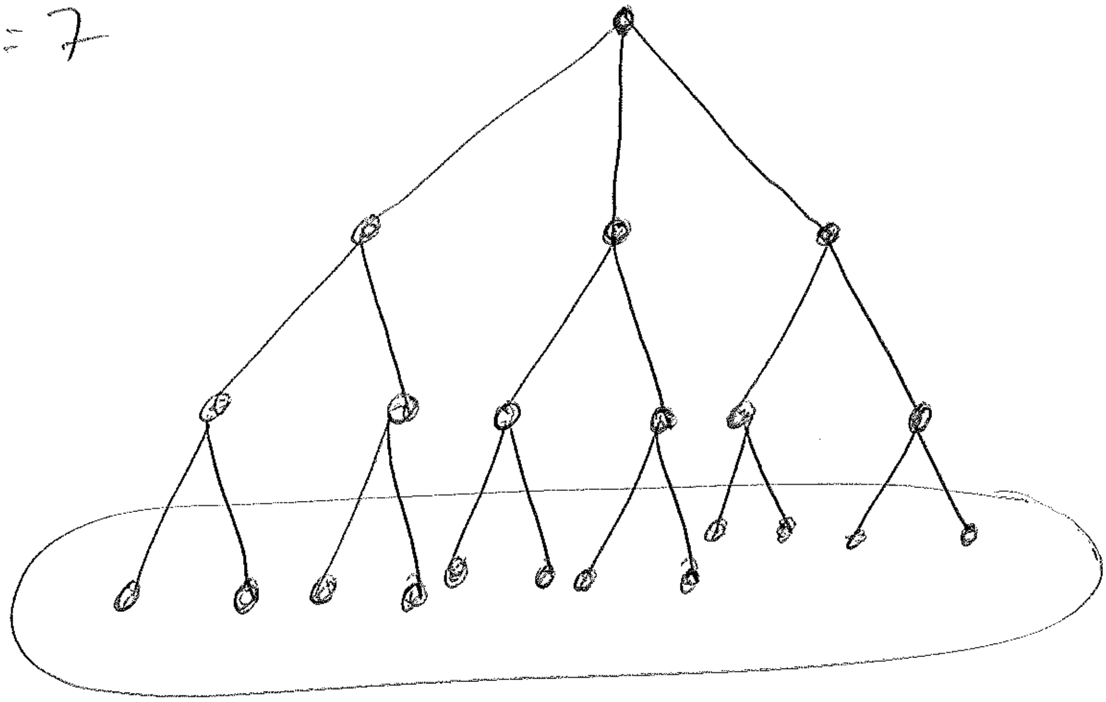
Edges across the dotted line are :

$\{1, A\}, \{1, C\}, \{2, B\}, \{2, D\}$

$\{3, A\}\ \{3, C\}\ \{4, B\}, \{4, D\}$

15.8.19 (ctd.)

$g = 7$



Not possible to find a subgraph on these 12 vertices which is regular of degree 2 (ie: a disjoint union of cycles), without creating a cycle of length 6 or less in the graph as a whole.