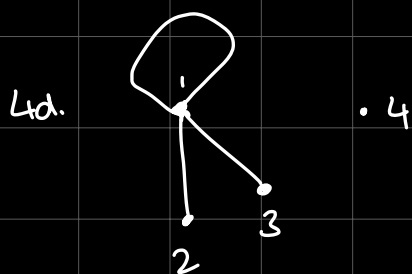


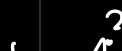
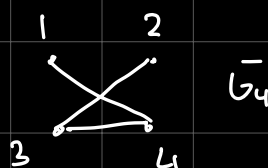
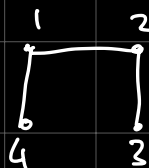
4a. 1 to 11
 2 to 12
 3 to 7
 8 to 6
 4 to 10
 9 to 5

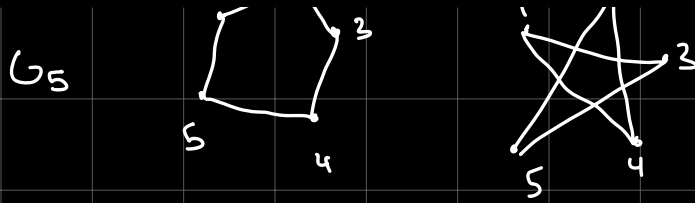
4b. 4 possible isomorphisms. We can have 4 orientations mapping 1 to 11, 7, 10, 8. This gives 4 possible combinations

4c. 4 possible automorphisms



8. G_4





8b. The number of total arcs would be odd for number of arcs before and after

9a. 16 combinations. We have $(5,6)$, $(1,2)$, $(8,7)$

9b. can be swapped. And this occurs twice for when $(5,6)$ are swapped amongst themselves and when $(5,6)$ are swapped with $(8,7)$.