This Class

4.2 Point Groups

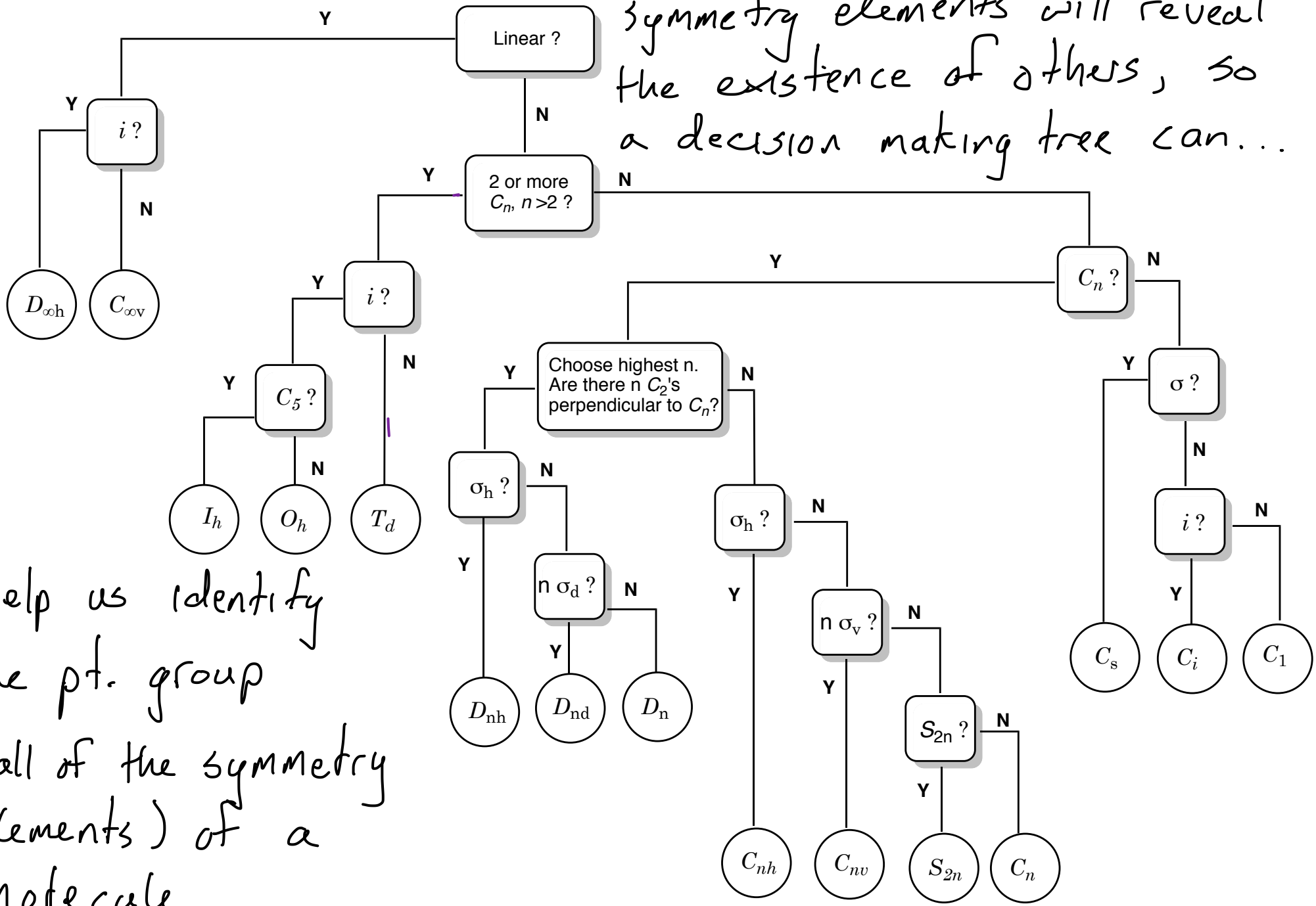
Next Class

4.3 Properties and Representations of Groups

A pt group is a listing of all the symmetry elements of a molecule

Don't try to identify all possible symmetry elements; use a decision making tree instead.

The existence of some symmetry elements will reveal the existence of others, so a decision making tree can...

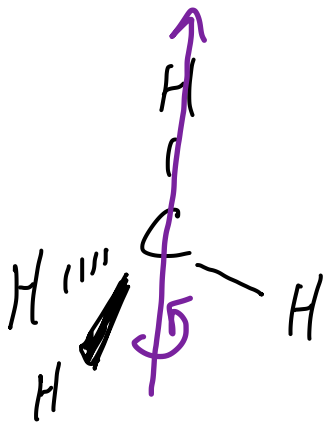


help us identify the pt. group (all of the symmetry elements) of a molecule

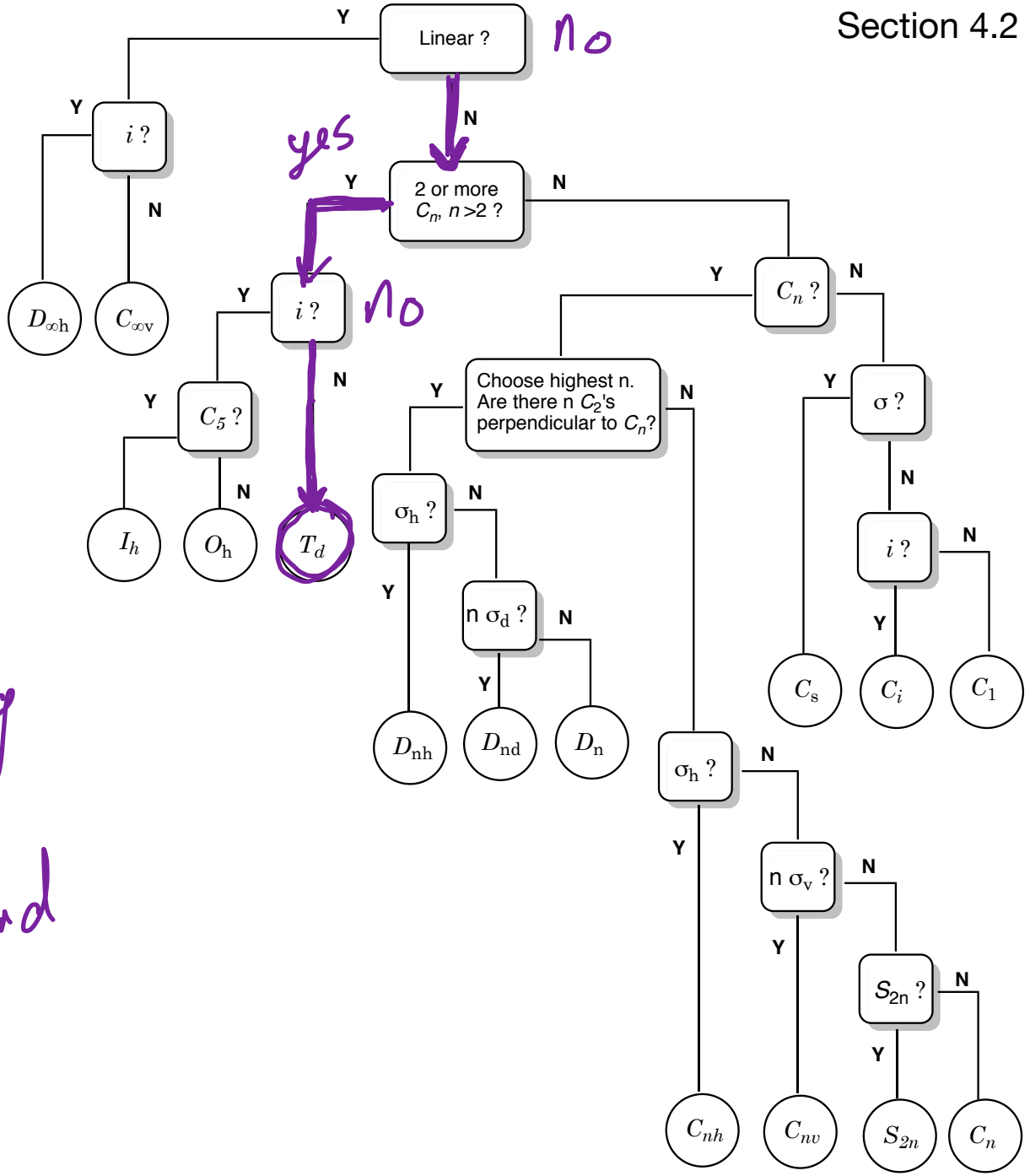
Using the Tree

CH_4

Draw and or build the molecule

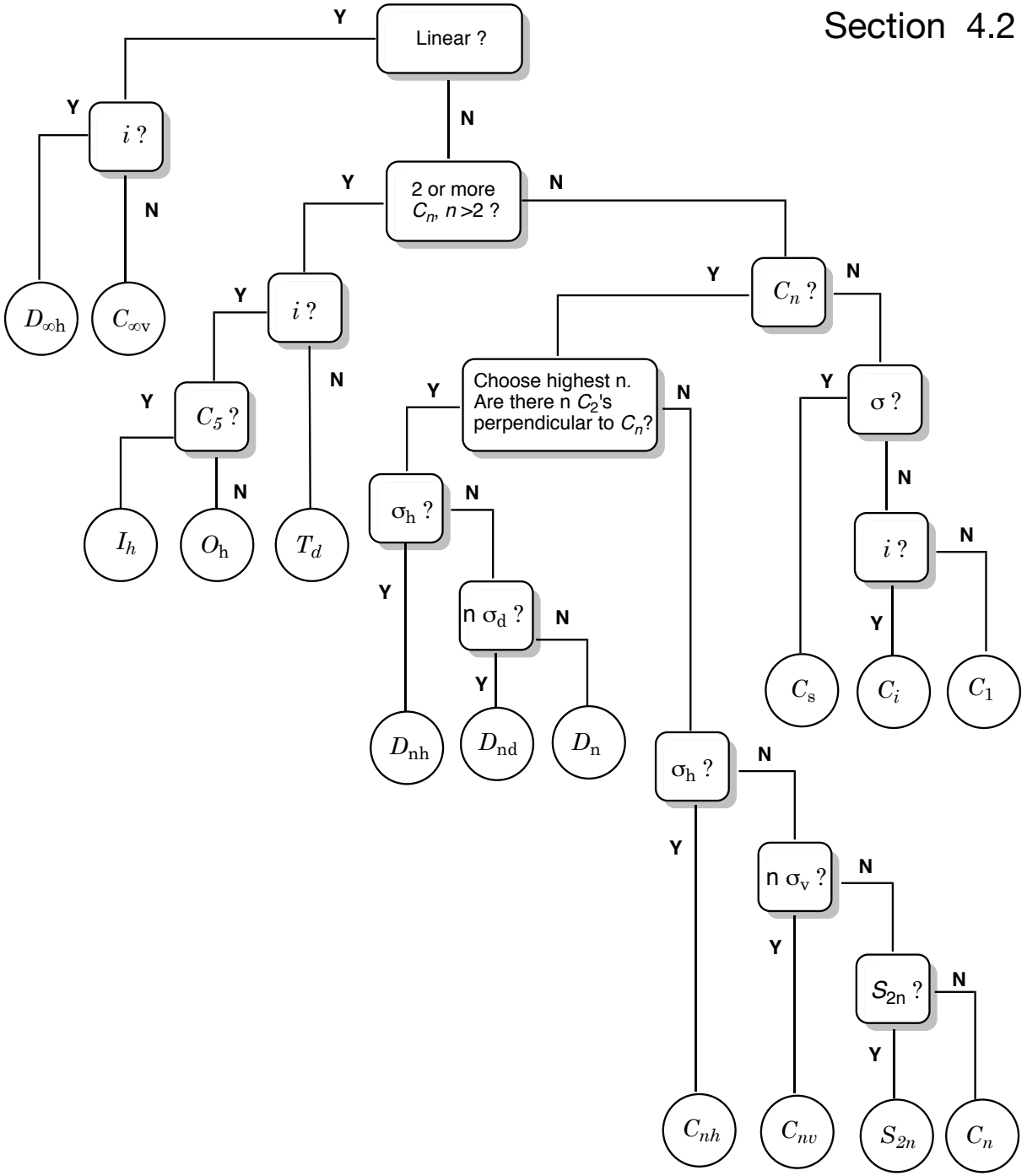


4 C_3's one along each ⊥ to H bond



Using the Tree

BF_3



CH_2Cl_2

PCl_3

HCN

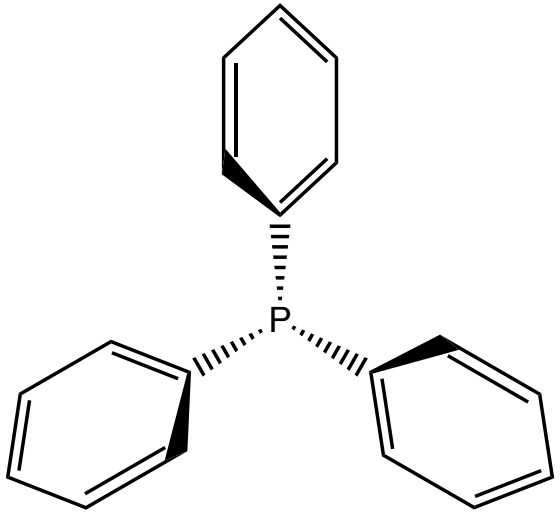
$PtCl_4^{2-}$ (square planar)

C_2H_2

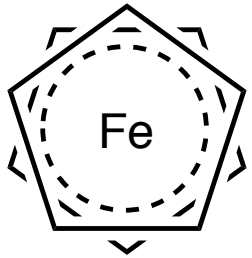
H_2O

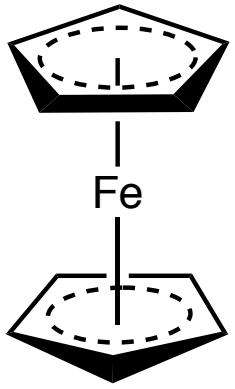
BrF_5

PPh_3



Fc





CH_2Cl_2	C_{2v}	Fc	D_{5d}
PCl_3	C_{3v}	BrF_5	C_{4v}
HCN	$C_{\infty v}$	PPh_3	C_3
$PtCl_4^{2-}$	D_{4h}	H_2O	C_{2v}
C_2H_2	$D_{\infty h}$		