VSEPR Theory, Molecular Geometry, Molecular Dipoles

I-For the following molecules indicate the *domain* geometry and *molecular* geometry (may be the same in some cases). Also indicate if the molecules are polar (have a non-zero molecular dipole), or not. (24 points)

a) PCl₃

b) PCl₅

c) CF₄

d) BrF₅

II-What is a hybridization scheme consistent with the following? (Choices sp, sp², sp³, sp³d, sp³d²) (6 points)

a) BeH₂

b) NH₄⁺

c) PF₆⁻