

Exercise 12.3

Isomers

1. Draw all geometric isomers of each of the following co-ordination complexes:
You do not need to show lone pairs, and you may use condensed notation for the NH_3 and H_2O ligands. In other words, you do not need to draw each N-H or O-H bond.
 - (a) square planar $[\text{PtBr}_2\text{Cl}_2]^{2-}$
 - (b) square planar $[\text{PtBrCl}_2\text{I}]^{2-}$
 - (c) square planar $[\text{PtBrClFI}]^{2-}$
 - (d) octahedral $[\text{CoCl}_2(\text{NH}_3)_4]^+$
 - (e) octahedral $[\text{CoCl}_3(\text{NH}_3)_3]$
 - (f) octahedral $[\text{CoCl}_2(\text{NH}_3)_2(\text{H}_2\text{O})_2]^+$
2. Where appropriate, label each of your answers to question 1 as *cis*, *trans*, *fac* or *mer*.