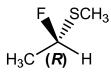
## **Chemistry 2301**

## Workshop 9 Solutions Achiral or Chiral?



HO (R) (R) (N) OH

НО ТОН

All molecules with one chiral center are chiral.

The mirror image of an (R,R) molecule is (S,S). That's not the same. So this is chiral.

This molecule has no chiral centers, and that's a tip. But it also has a plane of symmetry. Achiral.



or

CHIRAL

or

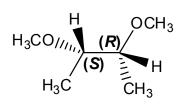
**CHIRAL** 

or

ACHIRAL

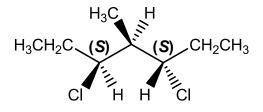
ACHIRAL

ACHIRAL ?



?

This molecule has an equal number of (R) and (S) stereocenters, and the groups attached to each are the same. This molecule is meso.



On the other hand, this isn't meso. Chiral.



Or ACHIRAL ?



or

ACHIRAL

?