1. Provide the IUPAC name of the following molecule:

\[
\begin{align*}
\text{HO} & \quad \text{Cl} \\
\text{F} & \quad \text{F} \\
\text{Cl} & \quad \text{Cl}
\end{align*}
\]

**4,4-dichloro-1,1-difluoro-2-cyclohexanol**

2. Draw the two chair conformations of the molecule in #1. Which is more stable?

The conformer on the left, with an equatorial OH, is more stable.

3. Draw Newmann projections for the most stable conformations looking down the indicated bonds in these molecules.

4. Are the two molecules shown in #3 equally stable? If not, which is more stable and (briefly) why?

**see above**