1. (4 pts) Name the following compounds, adhering to IUPAC nomenclature guidelines.

\[
\begin{align*}
\text{3-bromo-4-chlorohexane} \\
\text{bicyclo[2.2.2]octane}
\end{align*}
\]

2. (3 pt each) Identify each of the following structures as cis or trans.

\[
\begin{align*}
\text{trans} & \quad \text{cis} & \quad \text{trans}
\end{align*}
\]

3. (5 pts) Draw the two chair conformers for the cyclohexane derivative shown. (With the exception of the H on the ring carbons bearing a substituent, do not show the hydrogens. Neatness and clarity counts!) Draw equilibrium arrows to clearly identify the lower energy conformer.

\[
\begin{align*}
\text{conformer 1} & \quad \text{conformer 2}
\end{align*}
\]