Conformational Analysis  

Name:  

1. Identify if the following structures are the same, constitutional isomers, conformational isomers or different.  

   a)  

   ![Diagrams](image1)
   
   ![Diagrams](image2)

2. Use the Newman projection on the indicated bond, to draw the most stable conformer for each compound.  

   a) C2-C3 bond of 3- methylpentane  

   ![Diagrams](image3)

   b) C3-C4 bond of 3,3-dimethylhexane  

   ![Diagrams](image4)
3. Draw the two chair conformations of each compound and label the substituents as axial and equatorial. In all cases determine the more stable conformer.
   a) (Cis)-1-ethyl-2-isopropylcyclohexane

   b) (Trans)-1-ethyl-2-isopropylcyclohexane

   c) (Cis)-1-ethyl-3-methylcyclohexane

   d) (Trans)-1-ethyl-3-methylcyclohexane

   e) (Cis)-1-ethyl-4-methylcyclohexane

   f) (Trans)-1-ethyl-4-methylcyclohexane