1. a) Give the conditions for the hydrogenation of a simple alkene.
   
   b) Write the equation for the hydrogenation of propene.

2. The diagram (adapted from the Chemguide page) shows the conversion of a vegetable oil into a saturated fat.

   CH₃(CH₂)₇CH=CH(CH₂)₇COOCH₂
   CH₃(CH₂)₇CH=CH(CH₂)₇COOCH
   CH₃(CH₂)₇CH=CH(CH₂)₇COOH₂
   CH₃(CH₂)₇CH₂CH₂(CH₂)₇COOCH₂
   CH₃(CH₂)₇CH₂CH₂(CH₂)₇COOCH
   CH₃(CH₂)₇CH₂CH₂(CH₂)₇COOCH₂

   a) What is a saturated fat?

   b) Explain the difference between a monounsaturated fat or oil and a polyunsaturated fat or oil.

   c) Give the conditions for the change shown in the diagram.

   d) What is the point of manufacturers doing the above reaction?

   d) This process can form trans fats. What are trans fats, and why are they undesirable?