1) Which triacylglycerol yields more energy upon oxidation: one containing three linolenic acid residues or one containing three stearic acid residues? Explain.

2) Why can’t triacylglycerols be significant components of lipid bilayers?

3) Draw the substrates and products for the hydrolysis of 1-palmitoyl-2-oleoyl-3-phosphatidylcholine by phospholipase D.

4) In some autoimmune diseases, an individual develops antibodies that recognize cell constituents such as DNA and phospholipids. Some of the antibodies react with both DNA and phospholipids. What is the structural basis for this cross-reactivity?

5) Animals cannot synthesize linoleic acid (a precursor of arachidonic acid) and therefore must obtain this essential fatty acid from their diet. Explain why cultured animal cells, however, can persist in the absence of linoleic acid.