Name _____ Date _____ Period _____

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Lipids

Biology

Answer in complete sentences. Show your setup for calculations.

1. Name the type of lipid that fits each description.

Description	Type of lipid
Glycerol joined to three fatty acids, stores energy	
A phosphate head and two fatty acid tails, forms membranes	
Four connected rings of carbon atoms, includes cholesterol	

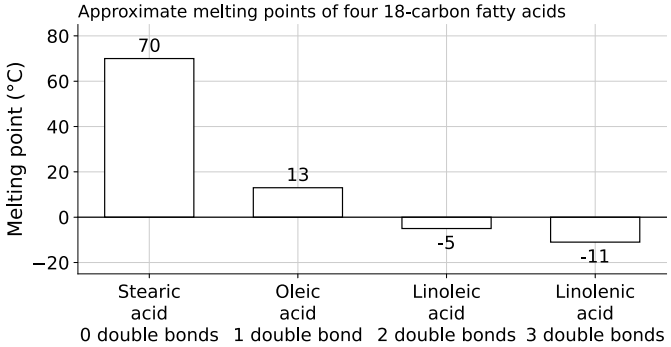
2. Fat provides about 9 kcal per gram.

(a) How much energy is in 20 g of fat? Show your setup.

(b) How many molecules of water are released when one triglyceride forms?

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3. The graph shows melting points of four 18-carbon fatty acids.



(a) How many double bonds does the fatty acid that melts at 13°C have?

(b) Explain why stearic acid is a solid at room temperature but linolenic acid is a liquid. Use the shape of the tails.

4. Phospholipids are placed in water.

(a) Which part of a phospholipid faces the water?

(b) Explain why phospholipids form a bilayer in water.

(c) Which is more likely to have double bonds in its fatty acids, olive oil (liquid) or butter (solid)? Explain.

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