

## **Problem Set 21: Lipids**

1. In nature, the double bonds of unsaturated fats are almost always of the \_\_\_\_\_ geometry.
2. What chemical reaction results in trans fats in our foods?
3. What functional group forms when a carboxylic acid and an alcohol react under acid conditions?
4. Write out a reaction to show 1-hexanol reacting with pentanoic acid in the presence of an acid catalyst.
5. Lauric acid is the predominate fatty acid in coconut oil. It is a saturated fatty acid with 12 carbons. Answer a-b below:
  - a. Draw lauric acid below.
  - b. Draw a triglyceride with lauric acid as it's three fatty acid chains.
6. What type of fatty acids contain multiple double bonds?
7. Draw the general structure for a sterol.