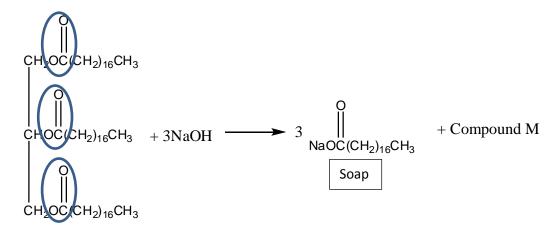
Question One- Fats and oils are trimester molecules. Hydrolysis of a fat can be represented by the equation below.



- a) circle ONE of the ester groups in the fat (any of the circle)
- b) Identify and label the soap molecule
- c) Draw and name compound M

Glycerol (propan-1,2,3-triol)

Unsaturated fats are usually considered to be healthier than saturated fats

d) What is meant by the term unsaturated, and determine is the fat above a saturated fat or unsaturated fat. The fatty acid molecule in unsaturated fat contains C=C double bond, because C=C double bond able to perform addition reactions, therefore it is classified as unsaturated.

The molecules above is saturated because it does not contain C=C double bond

e) Describe a chemical test to determine is the fat saturated or unsaturated. Provide the reagent(s) needed and the expected outcome of the test.

Bromine water test

If double bond is present, it will decolorize bromine water because the additional reaction

$$R \longrightarrow C \longrightarrow C \longrightarrow R + Br_2 \longrightarrow R \longrightarrow C \longrightarrow C \longrightarrow F$$