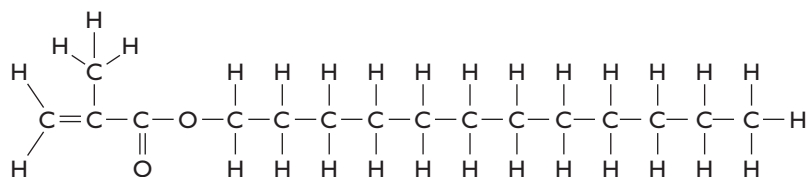


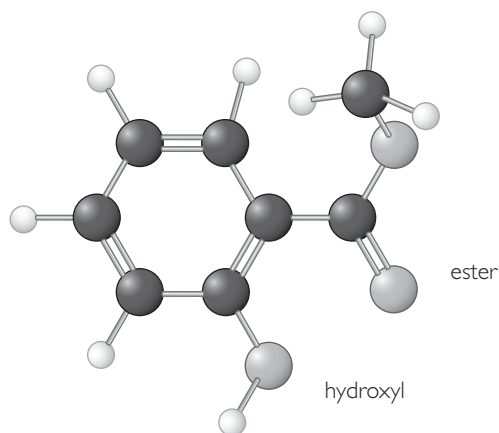
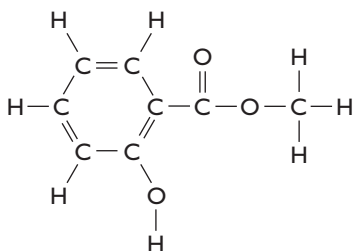


Imagine that the hydroxyl functional group in the alcohol is changed to an amine functional group. Draw the new structural formula. What would remain the same about the molecule, and what would change?

3. Lauryl methacrylate is a compound added to engine oil to increase its viscosity or thickness. Its molecular formula is  $C_{16}H_{30}O_2$ .



- a. Predict the phase and polarity and whether the compound has a smell.
- b. Explain your reasoning for the answers to part a.
4. Consider the molecule  $C_8H_8O_3$ , called methyl salicylate. Its structural formula and three-dimensional structure are shown.



- a. Circle and name the functional groups present in this model.
- b. What is the overall shape of the molecule?
- c. Predict the smell of methyl salicylate.
- d. Explain your reasoning.
- e. Does methyl salicylate have a mirror-image isomer? Explain.