CHEM 220 Problem Set 3

1) Write the formulas and draw the structures for the following compounds:

a) ethane b) propene c) butane d) cis-2-butene

e) trans-2-butene f) 1,2-butadiene g) pentene h) cis-2-pentene

i) trans-2-pentene j) hexane k) cis-2-hexene l) trans-4-octene

m) trans-6-eicosene n) cis-8-eicosene o) cis-2-trans-5-cis-7-cis-9 eicosatetraene

2) Write out the following reactions with their products using structures:

a) propene + HCl b) propene + HBr

c) propene + HBr with peroxides d) 2-butene + HF

e) 2-butene + HBr f) 2-butene + HBr with peroxides

g) butene + HBr h) butene + HBr with peroxides

i) hexene + HCl j) hexene + HF

k) hexene + HI (THINK!) l) hexene + HBr

m) hexene + HBr with peroxides n) octene + HBr

o) octene + HBr with peroxides p) octene + HCl

3) Write out the following acid-catalyzed reactions with their catalyst and products using structures:

a) propene + water b) butene + water

c) pentene + water d) hexene + water

e) heptene + water f) octene + water

4) Name the organic products in #'s 2 and 3, above, using IUPAC nomenclature