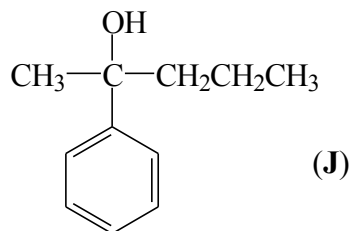


- 2-Phenyl-2-pentanol (**J**) is treated with concentrated sulfuric acid to give a mixture of three alkenes (**K**), (**L**) and (**M**). Alkenes (**K**) and (**L**) are diastereomers while (**K**) and (**M**) [and (**L**) and (**M**)] are constitutional isomers. Give the structures and systematic names for (**K**), (**L**) and (**M**).



<b>(K)</b>	<b>(L)</b>	<b>(M)</b>
Name	Name	Name

Outline a reaction sequence that converts benzene into 2-phenyl-2-pentanol (**J**) and that also uses 2-pentanone as a reactant somewhere in the sequence. Any solvents and inorganic reagents may be used. More than one step is required. Show clearly the reagents you would use and draw constitutional formulas for any intermediate compounds.

