



1 Complete this table with the names and structures of some hydrocarbons.

Displayed formula			
Name	pentene	propane	propene

2 a Hexane is an alkane containing 6 carbon atoms. Give its molecular formula. **C₆H₁₄**

b Hexene is an alkene containing 6 carbon atoms. Give its molecular formula. **C₆H₁₂**

3 Ethene can be made by cracking alkanes such as dodecane (C₁₂H₂₆) in the kerosene fraction.

a Why are fractions containing larger alkanes cracked?

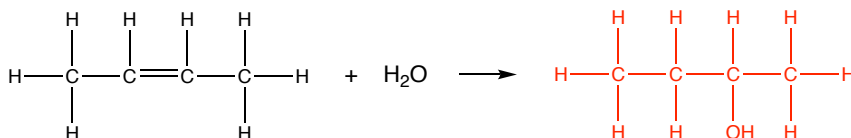
**bigger alkanes are in lower demand
cracking converts them into more valuable shorter alkanes & alkenes**

b Write a balanced equation for this reaction. **C₁₂H₂₆ → C₂H₄ + C₁₀H₂₂**

4 Butene reacts with steam at high temperature and pressure and with concentrated phosphoric acid as catalyst.

a Name the type of reaction taking place. **addition**

b Complete the equation for this reaction.



5 The alkanes in crude oil are separated into fractions by fractional distillation.

a Is each fraction a pure substance or a mixture? Explain how you can tell.

mixture as they boil over a range of temperatures

b Describe and explain how this separation is done at an oil refinery.

**vaporise oil
put into tower that is hot at bottom and cool at top
they condense at different heights in tower
because they have different boiling points
smaller molecules condense at top / bigger molecules condense at bottom**