

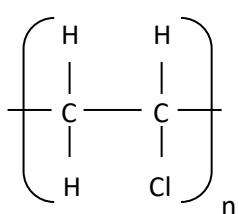
# Polymers – How to get full marks!

- A typical exam question is: *Explain what is meant by polymerisation (2 marks)*
  - In your answer you must mention
    - many small molecules (monomers)
    - react/join to form a long chain (polymer)
- Another question often on exam papers requires you to draw either the monomer or polymer molecule. Follow these rules to make sure you score top marks!

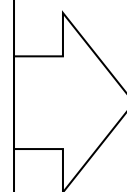
- **Drawing a monomer**

e.g. *The structure of a polymer can be represented by the diagram below.*

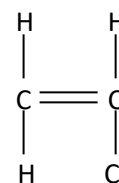
*Draw the structure of the monomer from which it is formed.*



1. Remove the brackets, bonds on the edges and 'n'.
2. Change the bond in between the 2 carbons to a double bond.

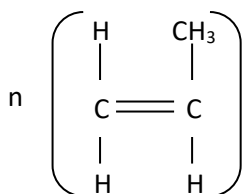


**ANSWER:**

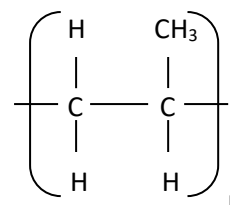
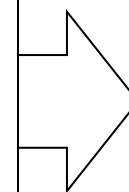


- **Drawing a polymer**

e.g. *Complete the diagram to show how poly(propene) is formed from propene.*



1. Change the double bond to a single bond.
2. Add single bonds coming out of each side
3. Add brackets and write 'n' after the bracket.



**ANSWER:**

 **Now use these rules to fill in the missing diagrams on the next page.**

Monomer	Polymer
	$\left[ \begin{array}{cc} \text{Cl} & \text{Cl} \\   &   \\ -\text{C} & -\text{C}- \\   &   \\ \text{Cl} & \text{Cl} \end{array} \right]_n$
$n \left( \begin{array}{cc} \text{H} & \text{H} \\   &   \\ \text{C} & = \text{C} \\   &   \\ \text{H} & \text{H} \end{array} \right) \quad \longrightarrow$	
$n \left( \begin{array}{cc} \text{F} & \text{H} \\   &   \\ \text{C} & = \text{C} \\   &   \\ \text{H} & \text{H} \end{array} \right) \quad \longrightarrow$	
	$\left[ \begin{array}{cc} \text{H} & \text{Br} \\   &   \\ -\text{C} & -\text{C}- \\   &   \\ \text{H} & \text{H} \end{array} \right]_n$
	$\left[ \begin{array}{cc} \text{H} & \text{H} \\   &   \\ -\text{C} & -\text{C}- \\   &   \\ \text{C}_6\text{H}_5 & \text{Cl} \end{array} \right]_n$