

Collaborative Learning Exercise
Polymer Structure
SOLUTIONS

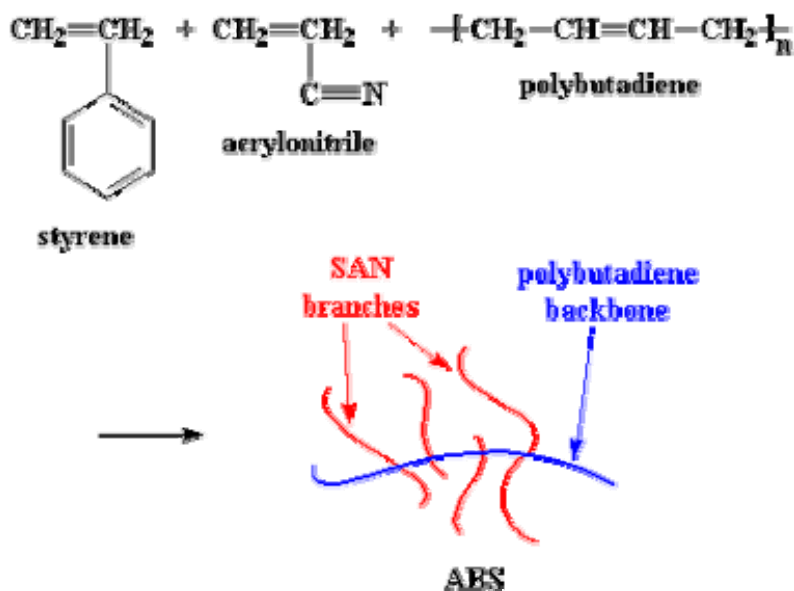
There is a widespread variation in the possible structure of polymers and their end properties (density, chemical reactivity, mechanical and electrical properties...) greatly depend on the structure. So, as a start to polymers, we are going to review the terminology in classifying the structure. The definitions covered in the book are:

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|---------------------------------|----------------------------|
| 1. isotactic stereoisomerism | 8. crosslinked polymer |
| 2. syndiotactic stereoisomerism | 9. networked polymer |
| 3. atactic stereoisomerism | 10. random co-polymer |
| 4. cis geometrical isomerism | 11. alternating co-polymer |
| 5. trans geometrical isomerism | 12. block co-polymer |
| 6. linear polymer | 13. graft co-polymer |
| 7. branched polymer | |

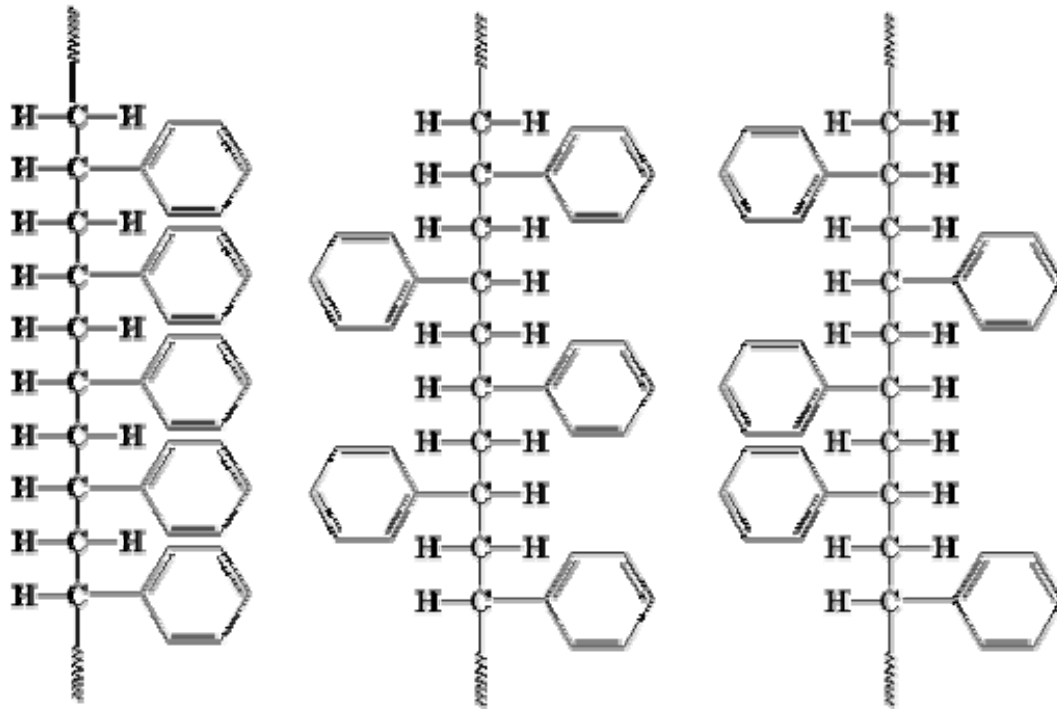
Below are five polymers that illustrate some of the terminology above. Have each group member choose one or two below and find the terminology they illustrate. Explain your answers to the group.

Note: All these figures come from <http://www.pslc.ws/mactest/index.htm> which is a SUPERB tutorial site on polymers.

A.) ABS below illustrates #13 of polymer structure.



B.) These forms of polystyrene illustrates #_1_, _2_, and 3_ of polymer structure.



C.) SBS shown below illustrates #_12_ of polymer structure.

