

Problem-8

Hence,

- # $P \rightarrow$ Consist of the problems that are solvable in polynomial time.
- # $NP \rightarrow$ Problems whose solution can be verified in polynomial time. ~~Here~~
- # $NP\text{-Hard} \rightarrow$ If all problems in NP are polynomial time reducible.
- # $NP\text{-Complete} \rightarrow$ If an $NP\text{-Hard}$ is inside the set of NP problem that NP complete

Now the difference between NP Hard and NP Complete:

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| <p>① A problem is NP-Hard if any problem in NP can be reduced to it in polynomial time.</p> <p>② It is not a decision problem.</p> <p>③ NP-Hard Problems are:</p> <ul style="list-style-type: none"> ↳ Halting Problems ↳ Halting ↳ Vertex Cover Problems. | <p>① A problem is NP Complete if any problem in NP can be reduced to it in polynomial time and it is a NP.</p> <p>② It is exclusively decision problem.</p> <p>③ NP-Complete Problems are</p> <ul style="list-style-type: none"> ↳ Determining whether the graph has a hamiltonian cycle. ↳ Determining whether boolean formula is satisfiable or not. |
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