Lab W3D3
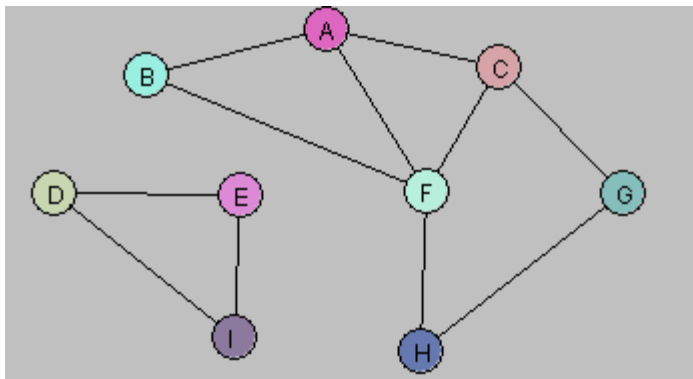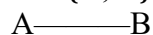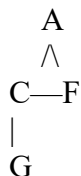
Quetion 1. *Induced Graphs.* Answer questions about the graph G = (V,E) displayed below.

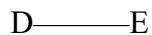**A. Let U = {A, B}. Draw G[U].**

    A————B
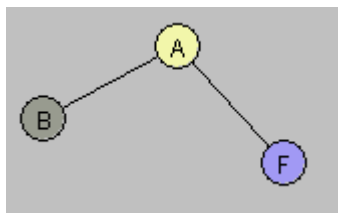
B. Let W = {A, C, G, F}. Draw G[W].

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        A
       /\
      C—F
      |
      G
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C. Let Y = {A, B, D, E}. Draw G[Y].

  A————B   D————E

D. Consider the following subgraph H of G:

Is there a subset X of the vertex set V so that H = G[X]? Explain.
A: There is **no** subset X of V such that $H = G[X]$. In the subgraph H, the vertices are $\{A, B, F\}$ and the only edges shown are A__B and A___F.
However, in the original graph G, there is **also** an edge between B and F.

E. **Find a way to partition the vertex set V into two subsets V$_1$, V$_2$ so that each of the induced graphs G[V$_1$] and G[V$_2$] is connected and G = G[V$_1$] ∪ G[V$_2$].**

Question 2. The following graph has a Hamiltonian cycle. Find it.