Concepts & Notation

• Sec. 1.1: vertices, $\nu$, edges, $\epsilon$, graph, planar graph, adjacent, incident.

• Sec. 1.2: identical graphs, isomorphic graphs, $G \cong H$, complete graphs $K_n$, empty graphs $E_n$, bipartite graph, complete bipartite graph $K_{m,n}$, graph complement $G^c$.

• Sec. 1.3: incidence matrix $M$, adjacency matrix $A$.

• Sec. 1.4: subgraph $(H \subseteq G)$, spanning subgraph, induced subgraph $G[V']$, edge-induced subgraph $G[E']$.

• Sec. 1.5: degree, maximum degree $\Delta$, minimum degree $\delta$

Reminders

1. Remember to email your Notes/Classroom Worksheet prior to the next class.

2. Homework #0 is due tomorrow. (We meet in Lab on Thursday!)

3. Read ahead in our textbook.

Review

1. What are identical graphs?

2. What are isomorphic graphs?

3. What are complete graphs?

4. What is an empty graph?

5. What is a bipartite graph?

6. What is a complete bipartite graph?
Notes

1. What is an *incidence matrix* $M$ of a graph? (these are not unique!)

2. What is an *adjacency matrix* $A$ of a graph? (these are not unique!)

3. What is a *subgraph* of a graph $G$?

4. What is an *induced subgraph* of a graph $G$?

5. What is an *edge-induced subgraph* of a graph $G$?

6. What is a *graph complement*?

7. What is an *edge-induced subgraph* of a graph $G$?

8. What is a *spanning subgraph*?

9. What is the *degree* of a vertex?

10. What is the *minimum degree* of a graph?

11. What is the *minimum degree* of a graph?

12. What is the *maximum degree* of a graph?

13. **Claim**: The sum of the degrees of a graph equals twice the number of edges.