1. Which of the following graphs is **not** planar?
*(3 points)*

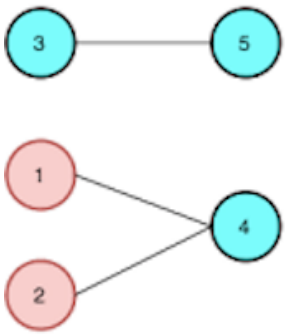
A. $K_4$

B. $K_{2,3}$

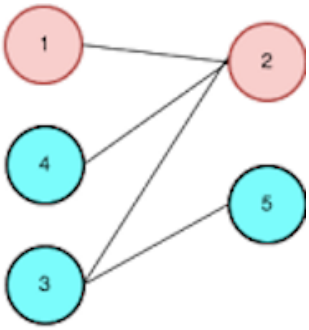
✓ C. $K_{3,3}$

D. $Q_3$

2. Consider the two graphs A and B below, each having two different vertex subsets of size 2 and 3.




Graph A




Graph B

Which of the following statements is true?

*(3 points)*

A. A and B are both bipartite

B. Only A is bipartite

C. Only B is bipartite

✓ D. Neither A nor B is bipartite

3. Suppose the undirected graph G=(V,E) with |V|=6. If its adjacency matrix A is the following 6×6 matrix

$$\begin{pmatrix} 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 & 1 \\ 1 & 1 & 1 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 0 \end{pmatrix},$$

which of the following is true?

*(3 points)*

A. G is bipartite and planar

B. G is 6-regular and planar

✓ C. G is bipartite and nonplanar

D. G is not bipartite and planar