Assignment 2

The due date for submitting this assignment has passed. As per our records, you have not submitted this assignment.

1) Every Eulerian simple graph with an even number of vertices has an even number of edges
   - True
   - False
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: False

2) Let $G$ be a connected graph. A vertex $v \in V(G)$ is said to be a cutvertex of $G$ if $G - v$ results in a disconnected graph.
   - $v$ is cutvertex of $G$
   - $v$ is not cutvertex of $G$
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: $v$ is not cutvertex of $G$

3) Let $G$ be a bipartite graph with $|X| = |Y| = n$, and the degree of every vertex in $X$ is more than $\frac{n}{2}$, then
   - $G$ has a Hamiltonian cycle
   - $G$ is not Hamiltonian
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: $G$ is not Hamiltonian

4) An independent set is a set of vertices in a graph, no two of which are adjacent. Every graph with diameter 10 has an independent set with a least 6 vertices.
   - At least 6 vertices
   - At least 7 vertices
   - At least 8 vertices
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: At least 6 vertices

5) If $G$ is a regular graph and $\text{diam}(G) = 3$, then
   - $\text{diam}(G) = 2$
   - $\text{diam}(G) = 3$
   - $\text{diam}(G) = 4$
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: $\text{diam}(G) = 4$

6) A 3-dimensional cube or hypercube, $Q_3$, is the simple graph whose vertices are the 3-tuples with entries in $\{0, 1\}$ and whose edges are the pair of 3-tuples that differ in exactly one position. In $Q_3$, isomorphic to the bipartite graph $G = (A \cup B, E)$ where $A = \{a_1, a_2, a_3\}$ and $B = \{1, 2, 3\}$, $E = \{(a_1, 1), (a_2, 2), (a_3, 3), (a_1, 2), (a_2, 1), (a_3, 2), (a_1, 3), (a_2, 3), (a_3, 1)\}$
   - Yes
   - No
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: Yes

7) Compute the diameter of $Q_4$
   - 3
   - 4
   - 5
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: 5

8) Is the graph below Hamiltonian?
   - Yes
   - No
   No, the answer is incorrect.
   Score: 0
   Accepted Answer: No