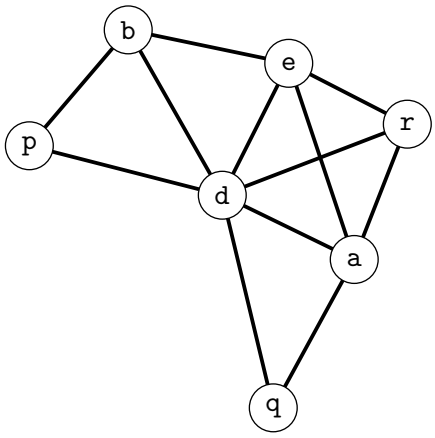
Question 1. Can a four regular graph contain a bridge?

Question 2. Can a five regular graph be bipartite?

Question 3. For the graph G pictured bellow let the edge between vertices u and v be denoted by $\{uv\}$.

1. what is the maximum clique in G
2. list the edges in the cut induced by the set $\{a, d\}$,
3. list all cut vertices in G



Question 4. Is it true that a forest with seven components has at least 14 leaves?

Question 5. Suppose that a tree has 1000 vertices of degree eight and 40 vertices of degree 5 and perhaps other vertices. Can such a tree have fewer than 4000 leaves? If yes describe one such tree, else argue that such tree cannot exist.