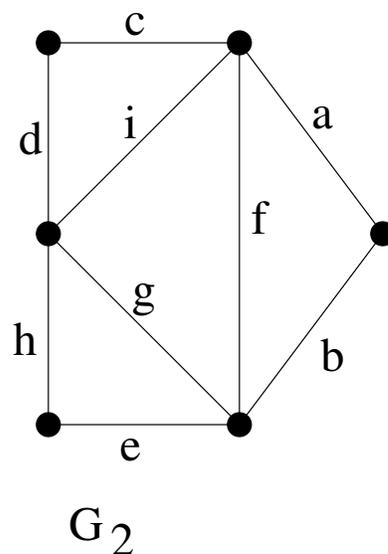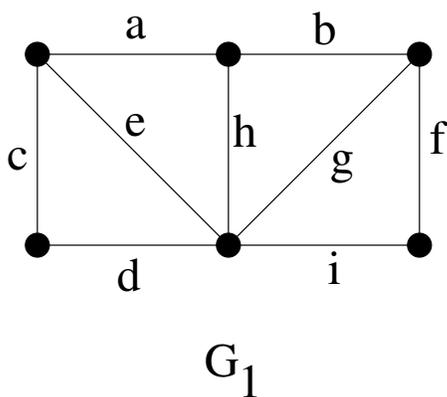# Problem set 5

This problem set is due in class on April 22tnd 2015.

1. Solve exercise 5-2 from the matroid notes.

2. Solve exercise 5-5 from the matroid notes.

3. Solve exercise 5-7 from the matroid notes.

4. Solve exercise 5-8 from the matroid notes.

5. We are given the following two graphs G_1 and G_2 with edge set $E = \{a, b, c, d, e, f, g, h, i\}$.

Observe that $S = \{a, b, c, d\}$ is a forest in both G_1 and in G_2, so it is independent in $M_1 = M(G_1)$ and $M_2 = M(G_2)$. Construct the exchange graph corresponding to S, and indicate which elements are sources and sinks. Using the exchange graph, find a larger set of elements which is acyclic in both G_1 and in G_2.

6. Solve exercise 5-12 from the matroid notes.