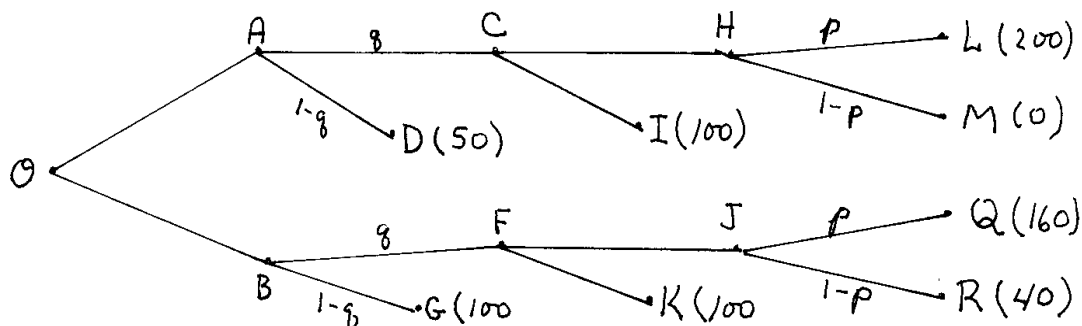
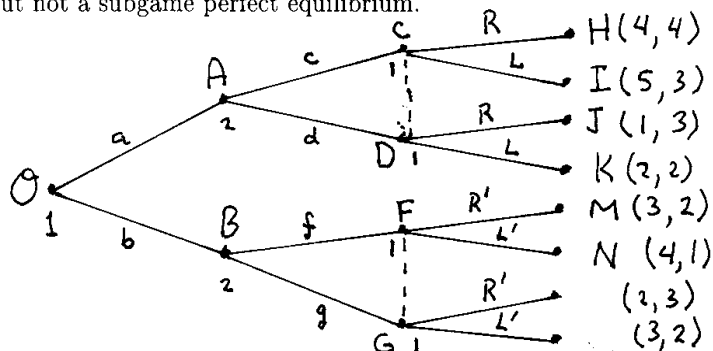


5. (25 Points) Consider the following decision tree for a single person, where the nodes $\{A, B, H, J\}$ are owned by "nature", and the rest of the nodes are owned by the person making the decisions. Assume $p = 0.75$, and $q = 0.6$. Solve the decision problem to maximize the payoff. Give the expected payoff at each node. What is the optimal path? *strategy?*



6. (25 Points) Consider the sequential game with imperfect information given in the following tree. Nodes $\{O, C, D, F, G\}$ are owned by player one and nodes $\{A, B\}$ are owned by player two. Show that the (pure) strategy $\{b, L, L'\}$, $\{d, g\}$ is a Nash equilibrium but not a subgame perfect equilibrium.



7. (25 Points) Consider the sequential game with imperfect information given in the following tree. Assume the beliefs of player two are $\mu_2(A) = \frac{2}{3}$ and $\mu_2(B) = \frac{1}{3}$. Consider the (mixed) strategy profile $\pi_1(a) = \frac{2}{3}$, $\pi_1(b) = \frac{1}{3}$, $\pi_2(L) = \frac{1}{4}$, and $\pi_2(R) = \frac{3}{4}$. Show that this strategy profile satisfies the conditions for a sequential equilibrium at the information set $\{A, B\}$.

