Game Theory Week 5: Monday Exercises
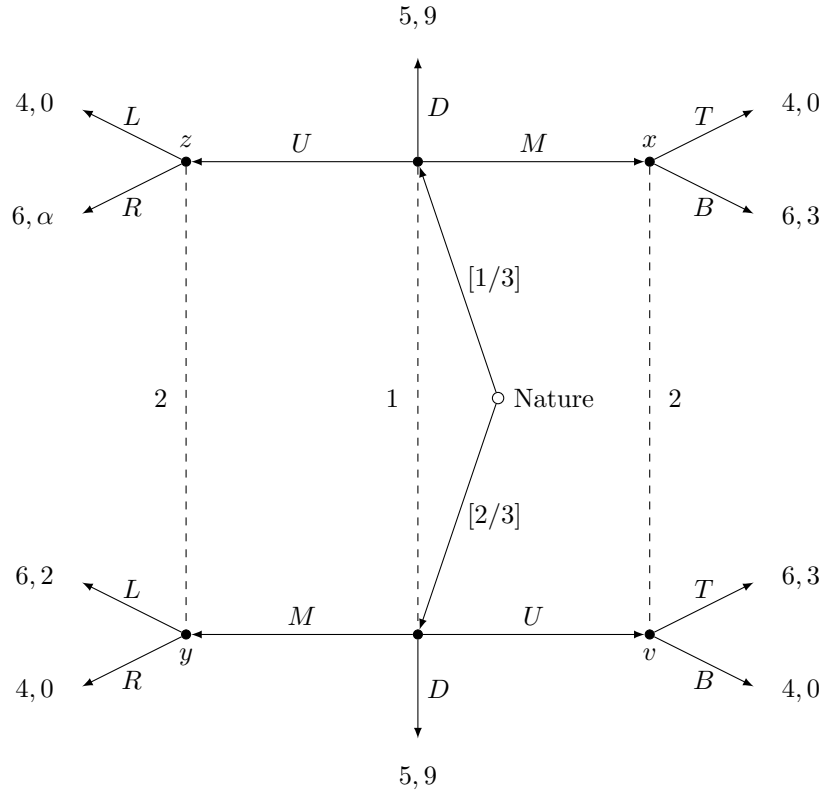
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1. Consider the following extensive form:

Suppose $\alpha > 0$. The numbers in brackets are the probabilities of the different actions, x, y, z, v are labels for nodes in the tree. (Be careful with 1's actions.)

(a) Describe the set of behavior strategies for each player.

(b) For any belief system μ consistent with a behavior strategy profile where D is not played with probability 1, show that $\mu(v) = \frac{1-\mu(y)}{1-\frac{3}{4}\mu(y)}$.

(c) Characterize the set of pure strategy almost PBEs for $\alpha = 1$.

(d) Which of the aPBEs are sequential equilibrium?

(e) If any of the aPBEs you found in (c) are not sequential, what is the lowest value of α that makes that strategy profile consistent with a sequential equilibrium. Verify that it is indeed a sequential equilibrium for that α.