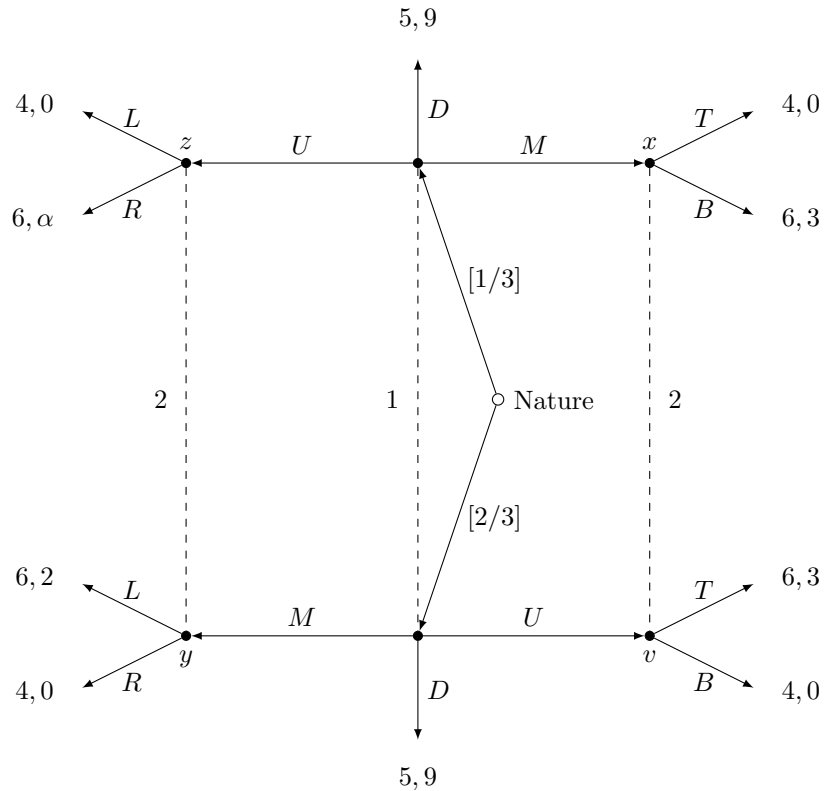


# Game Theory Week 5: In Class Exercises

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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.)

- Describe the set of behavior strategies for each player.
- For any belief system  $\mu$  consistent with a behavior strategy profile where  $D$  is not played with probability 1, show that  $\mu(v) = \frac{1-\mu(y)}{1-\frac{3}{4}\mu(y)}$ .
- Characterize the set of pure strategy almost PBEs for  $\alpha = 1$ .
- Which of the aPBEs are sequential equilibrium?
- If any of the aPBEs you found in (c) are not sequential, what is the lowest value of  $\alpha$  that makes that strategy profile consistent with a sequential equilibrium. Verify that it is indeed a sequential equilibrium for that  $\alpha$ .