# Assignment 111

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## 1 Solutions

1a. Compute the utility of each action as a function of $\gamma$

- Down: $\gamma >$ **0.9844 - 10**$\gamma^{101}$
- Up: $\gamma <$ **0.9844 + 10**$\gamma^{101}$

1b. Draw the utility of each action for the range $0 \leq \gamma < 1$.

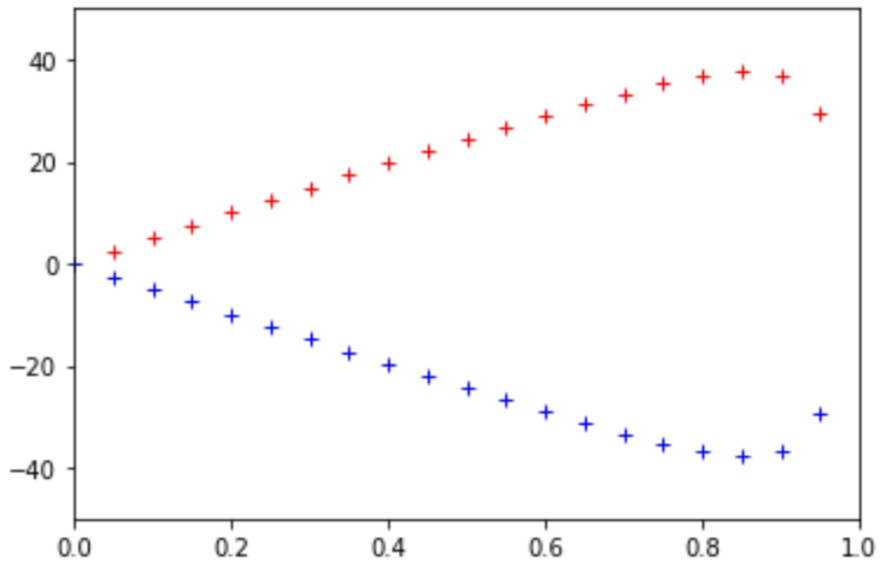


Figure 1: Utility Action

1c. $\gamma = 1/2$

- **Up**

2a. Compute Gain(A1)

- Gain(A1) = **0.172**

2b. Compute Gain(A2)

- Gain(A2) = **0.442**

2c. Compute Gain(A3)

- Gain(A3) = **0.022**

3. Draw a minimal0sized decision tree for the three-input XOR function

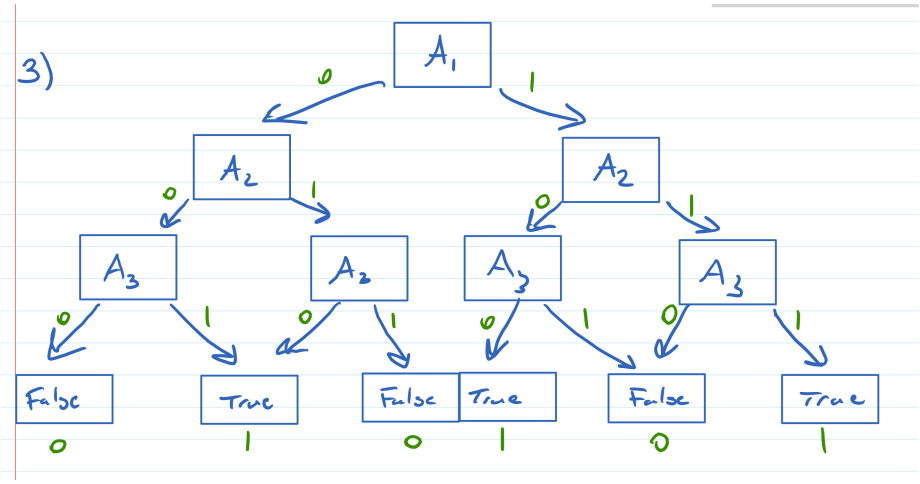


Figure 2: Minimal-sized Decision tree