ECO316: Applied Game Theory

Problem Set #0: Solutions

1. **Value of Information:**

   (a) One argument is: Suppose before information arrives, your most-preferred course of action yields expected payoff X. Then, after information arrives there are two possibilities: (i) the information does not change the most-preferred course of action, so the ex-ante expected payoff is unchanged, or (ii) the information does change the most-preferred course of action. When this is true, as preferences are held fixed, the new action plan must offer weakly higher expected utility (or else the action plan would not change). Thus, in this case, the delegating agent must achieve weakly higher expected payoffs. Hence, information always has non-negative value.

   Another argument would note that information alone cannot add / prohibit actions, so any course of action available before the information is also available afterwards. Since preferences are fixed, the agent will only switch action plans if it improves their utility, so information has non-negative value.