Youngberg

Econ 280—Bethany College

**Homework 06**

Answer all the following on a ***typed, stapled*** (if applicable)separate sheet of paper. You do not need to type equations and graphs. I charge 25 cents to staple your homework. Make sure that you justify your answers, use your own words, and show your work. All questions are equally weighted.

1. Consider the Neanderthal, Oog, and the *homo erectus*, Vladimir. When they see each other, they can get a weapon ready or show some items to trade. Of course, showing an item to trade (or showing that you are unarmed) puts you at a disadvantage in combat. Find Nash Equilibrium and any dominant strategies. Indicate if the strategies are strictly or weakly dominant and justify your answer.

|  |  |  |  |
| --- | --- | --- | --- |
|  | | Oog | |
| Fight | Trade |
| Vladimir | Fight | -1 , -1 | 7 , -7 |
| Trade | -7 , 7 | 4 , 4 |

1. We can think of the tragedy of the commons as a prisoner’s dilemma. Suppose two people, Chloe and Valentine, run a community garden together. They share all vegetables equally regardless how much each contributes to the weeding. Obviously more weeding means higher yields and less weeding decreases total yield. Of course, weeding is tough work and each would prefer to reap the benefits without the work. Thus each has an incentive to not weed the garden and reap meager rewards. How does a repeated game (perhaps by playing the game each summer or each month) solve this prisoner’s dilemma?
2. Consider the following game:

Ray

2,4

Big

Small

Frank

4,2

4,1

1,4

High

Low

Low

Frank

High

Determine rollback equilibrium. Justify your answer.

1. Rewrite the game in Question 3 by reversing the order of play. Find rollback equilibrium. Is there a first or a second mover advantage in this game? How do you know?
2. In 2011, Google released a competitor to Facebook: Google+. What type of good are Facebook and Google+? Why is it going to be hard for Google+ to become a serious rival to Facebook?