HOMEWORK #2  ANSWERS

1. The Nash equilibria are (4,6), (5,5) and (6,4).

2. The only Nash equilibrium is (1,1,1).

3. (a) The utility functions are:

\[
\begin{array}{c|cc}
\text{Ann's utility} & \text{Bob's utility} \\
\hline
\text{Sam} & 2 & 4 \\
\text{Todd} & 3 & 1 \\
\text{Ursula} & 1 & 3 \\
\text{Virginia} & 4 & 2 \\
\end{array}
\]

The extensive-form game is as follows:

There are several backward induction solutions. Some of them are shown below by heavy lines:
(c) There are 8 solutions.

(d) If by ‘outcome’ we mean the end result, then the common outcome to all the 8 solutions is that Virginia is chosen as president. If by ‘outcome’ we mean the actual sequence of moves, then there isn’t a common outcome, because in some solutions the sequence is veto S – veto U – choose V and in other solutions the sequence is veto U – veto S – choose V. Typically by outcome we mean the latter notion (the sequence of moves).