**Tutorial 10**

1) Utilities for flats a, b and c are:

For flat a, we have that:

so,

we can start of by computing for when VI = true:

and for when VI = false:

Now, we can compute the utility which would be:

U(bs, vi) = .

For flat b, we have that:

so,

we can start of by computing for when VI = true:

and for when VI = false:

Now, we can compute the utility which would be:

U(bs, vi) = .

For flat c, we have that:

so,

we can start of by computing for when VI = true:

and for when VI = false:

Now, we can compute the utility which would be:

U(bs, vi) = .

So, flat c has the highest utility.

2) N tends to grow quickly as γ becomes closer to 1. N tends to vary with γ for the different values of the ratio due to the fast convergence and N doesn’t depend on the ratio that much. If γ is small then a fast convergence is obtained, however this could mean the agent misses long term effects of its actions.

3) N = = .

4) So, for the second step the utility vector is , by placing these numbers inside the Bellman update we get: