

Explanation of part 2

The plot after running the learn function for 20 episodes shows roughly 6 peaks, and 6 valleys. There are two strong peaks, the tallest having a height of 0.14 and the second tallest having a height of 0.11. Other peaks have similar heights around 0.03. The two tall peaks have somewhat similar heights because the step size is only $0.1/8$ and only being ran for 20 episodes. This means that the updates for each episode will only update the height a maximum of $\sim 1\%$ of it's true value. This also explains why the widths of the peaks and valleys are similar. The area on the plot where there are no peaks or values are simply due to the fact that the 20 episodes did not cover any points in those tiles. If the dimensions of the tiles were changed to 11×21 , the plot would have more peaks/valleys. This means that examples 2 ($in1=4$, $in2=2$, $target=-1.0$) and 4 ($in1=4$, $in2=2.1$, $target=-1.0$) will be effecting less of the same tiles, since there are more tiles covering the same amount of area.