

State Action Value Function Example

In this Jupyter notebook, you can modify the mars rover example to see how the values of $Q(s,a)$ will change depending on the rewards and discount factor changing.

In []:

```
In [5]: import numpy as np
        from utils import *
```

```
In [6]: # Do not modify
        num_states = 6
        num_actions = 2
```

```
In [7]: terminal_left_reward = 100
        terminal_right_reward = 40
        each_step_reward = 0

        # Discount factor
        gamma = 0.5

        # Probability of going in the wrong direction
        misstep_prob = 0.4
```

```
In [8]: generate_visualization(terminal_left_reward, terminal_right_reward, each_step_
```

Optimal policy

100.0	32.18	10.88	6.15	13.23	40.0
100	←	←	→	→	40
	0	0	0	0	

$Q(s,a)$

100.0	100.0	32.18	23.26	10.88	8.28	5.91	6.15	9.84	13.23	40.0	40.0
100		0		0		0		0		40	

In []: