1. **1 / 1 point**

You are using reinforcement learning to control a four legged robot. The position of the robot would be its _____.

- ○ reward
- ○ action
- ◉ state
- ○ return

Correct
Great!

2. **1 / 1 point**

You are controlling a Mars rover. You will be very very happy if it gets to state 1 (significant scientific discovery), slightly happy if it gets to state 2 (small scientific discovery), and unhappy if it gets to state 3 (rover is permanently damaged). To reflect this, choose a reward function so that:

- ○ R(1) > R(2) > R(3), where R(1), R(2) and R(3) are positive.
- ○ R(1) < R(2) < R(3), where R(1) and R(2) are negative and R(3) is positive.
- ○ R(1) > R(2) > R(3), where R(1), R(2) and R(3) are negative.
- ◉ R(1) > R(2) > R(3), where R(1) and R(2) are positive and R(3) is negative.

Correct
Good job!

3. **1 / 1 point**

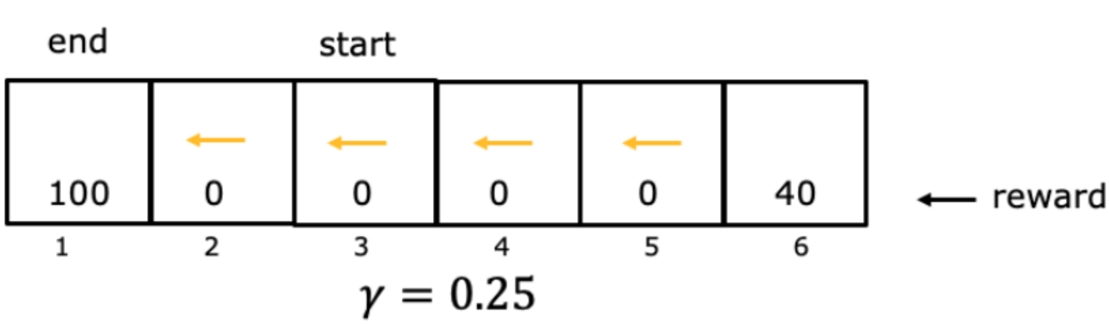
You are using reinforcement learning to fly a helicopter. Using a discount factor of 0.75, your helicopter starts in some state and receives rewards -100 on the first step, -100 on the second step, and 1000 on the third and final step (where it has reached a terminal state). What is the return?

- ◉ -100 - 0.75*100 + 0.75^2*1000
- ○ -0.25*100 - 0.25^2*100 + 0.25^3*1000
- ○ -100 - 0.25*100 + 0.25^2*1000
- ○ -0.75*100 - 0.75^2*100 + 0.75^3*1000

Correct
Awesome!

4. **1 / 1 point**

Given the rewards and actions below, compute the return from state 3 with a discount factor of $\gamma = 0.25$.



- ○ 0.39
- ◉ 6.25
- ○ 0
- ○ 25

Correct
If starting from state 3, the rewards are in states 3, 2, and 1. The return is $0 + (0.25) \times 0 + (0.25)^2 \times 100 = 6.25.$