## ✓ Congratulations! You passed!

**Grade received** 100%   **Latest Submission Grade** 100%   **To pass** 80% or higher

**Go to next item**

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**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

○ return

● state

✓ **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) 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 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

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

○ -100 - 0.25*100 + 0.25^2*1000

✓ **Correct**
Awesome!

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

| end | | start | | | |
|---|---|---|---|---|---|
| 100 | 0 | 0 | 0 | 0 | 40 |
| 1 | 2 | 3 | 4 | 5 | 6 |

←— reward

$\gamma = 0.25$

- ○ 0
- ◉ 6.25
- ○ 25
- ○ 0.39