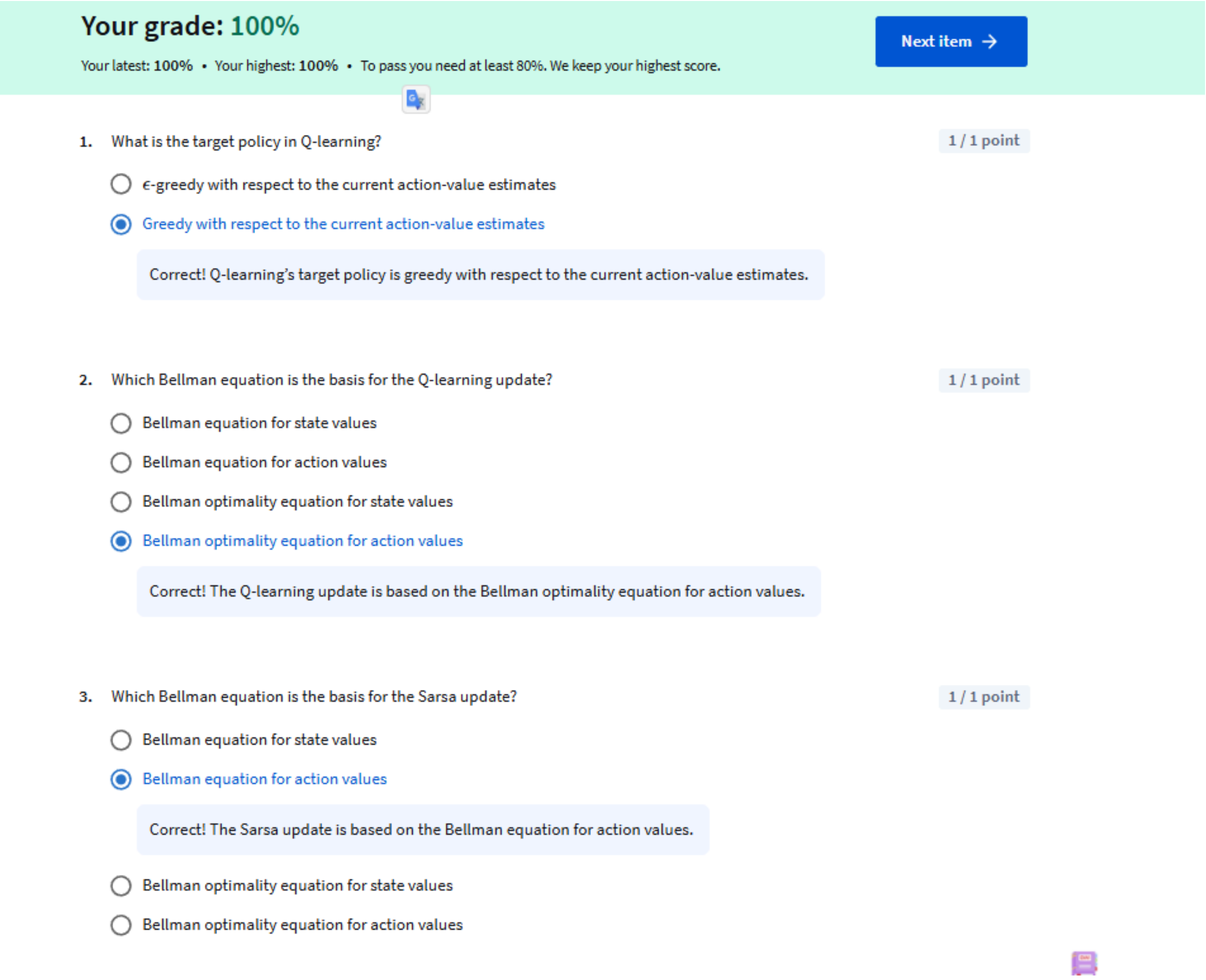


Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

1. What is the target policy in Q-learning? — 1 / 1 point

○ ϵ-greedy with respect to the current action-value estimates

● Greedy with respect to the current action-value estimates

Correct! Q-learning's target policy is greedy with respect to the current action-value estimates.

2. Which Bellman equation is the basis for the Q-learning update? — 1 / 1 point

○ Bellman equation for state values

○ Bellman equation for action values

○ Bellman optimality equation for state values

● Bellman optimality equation for action values

Correct! The Q-learning update is based on the Bellman optimality equation for action values.

3. Which Bellman equation is the basis for the Sarsa update? — 1 / 1 point

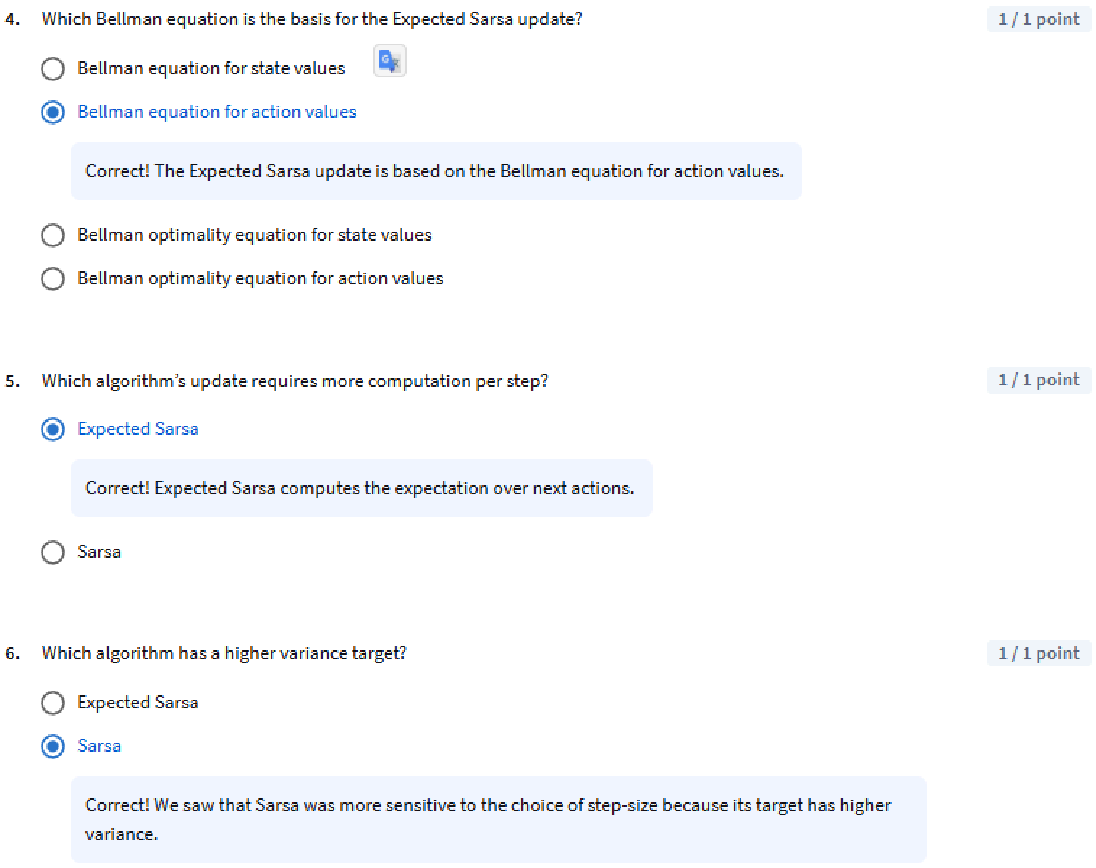
○ Bellman equation for state values

● Bellman equation for action values

Correct! The Sarsa update is based on the Bellman equation for action values.

○ Bellman optimality equation for state values

○ Bellman optimality equation for action values



4. Which Bellman equation is the basis for the Expected Sarsa update? 1 / 1 point

○ Bellman equation for state values

● Bellman equation for action values

Correct! The Expected Sarsa update is based on the Bellman equation for action values.

○ Bellman optimality equation for state values

○ Bellman optimality equation for action values

5. Which algorithm's update requires more computation per step? 1 / 1 point

● Expected Sarsa

Correct! Expected Sarsa computes the expectation over next actions.

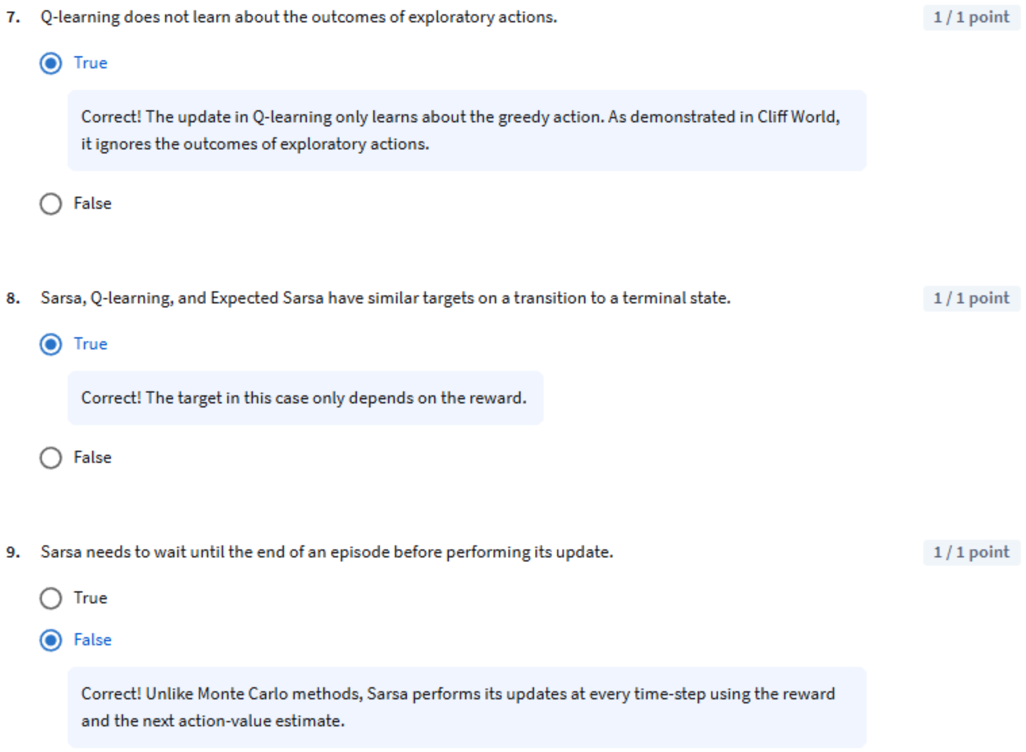
○ Sarsa

6. Which algorithm has a higher variance target? 1 / 1 point

○ Expected Sarsa

● Sarsa

Correct! We saw that Sarsa was more sensitive to the choice of step-size because its target has higher variance.



7. Q-learning does not learn about the outcomes of exploratory actions. 1 / 1 point

● True

Correct! The update in Q-learning only learns about the greedy action. As demonstrated in Cliff World, it ignores the outcomes of exploratory actions.

○ False

8. Sarsa, Q-learning, and Expected Sarsa have similar targets on a transition to a terminal state. 1 / 1 point

● True

Correct! The target in this case only depends on the reward.

○ False

9. Sarsa needs to wait until the end of an episode before performing its update. 1 / 1 point

○ True

● False

Correct! Unlike Monte Carlo methods, Sarsa performs its updates at every time-step using the reward and the next action-value estimate.