

Practice Quiz

TOTAL POINTS 9

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

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

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
- ☐ Bellman optimality equation for state values
- ☐ Bellman optimality equation for action values

✓

Correct

Correct! The Sarsa update is based on the Bellman 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
- ☐ Bellman optimality equation for state values
- ☐ Bellman optimality equation for action values

✓

Correct

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

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

1 / 1 point

- ☒ Expected Sarsa
- ☐ Sarsa

6. Which algorithm has a higher variance target?

1 / 1 point

- ☐ Expected Sarsa

✓

Correct

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
- ☐ False

✓

Correct

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

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

1 / 1 point

- ☒ True
- ☐ False

✓

Correct

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

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

1 / 1 point

- ☐ True
- ☒ False

✓

Correct