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1. Which of the following is true about policy-based methods? (**Select all that apply**)

1 / 1 point

- ☒ Policy-based methods allow smooth improvement in the policy without drastic changes.

✔ **Correct**

Correct. As the policy parameters change the action probabilities change smoothly, but with value-based methods a small change in action-value function can drastically change the action probabilities.

- ☒ Policy-based methods are useful in problems where the policy is easier to approximate than action-value functions.

✔ **Correct**

Correct. For example in the Mountain Car problem a good policy is easy to represent whereas the value function is complex.

- ☒ Policy-based methods can learn an optimal policy that is stochastic.

✔ **Correct**

Correct. It can learn a stochastic optimal policy, such as the soft-max in action preferences.

- ☒ Policy-based methods can be applied to continuous action space domains.

✔ **Correct**

Correct. By parameterizing a policy to represent a probability distribution such as Gaussian, it can be applied to continuous action space domains.

