

## ✔ Congratulations! You passed!

Grade received 100%

Latest Submission Grade 100%

To pass 80% or higher

**Go to next item**

1. For Metropolis-Hastings algorithms, an acceptance rate of 23.4 was shown to be ideal **1 / 1 point**

☒ True

☐ False

✔ **Correct**

PyMC3 offers algorithms for performing both MCMC and Variational Inference.

2. A high acceptance rate (>90%) is an indication that the sampler is not exploring the space very well **1 / 1 point**

☒ True

☐ False

✔ **Correct**

3. A low acceptance rate is an indication that **1 / 1 point**

☒ An incorrect proposal distribution is being used

☐ The variance of the proposal distribution is too low

✔ **Correct**

4. When using the NUTS algorithm, PyMC3 aims to get an acceptance rate of

1 / 1 point

☐ 75%

☒ 85%

☒ Correct

5. If you have convergence issues, it is better to

1 / 1 point

☐ Try increasing the total number of samples drawn

☒ Try increasing the number of tuning samples

☒ Correct

6. A step size that is too large can result in

1 / 1 point

☐ Large sample values

☒ Invalid sample values

☒ Correct

7. Large step sizes in Hamiltonian Monte Carlo can result in

1 / 1 point

☒ Integration errors

☐ Out-of-bounds errors

☒ Correct

8. Mixing in MCMC refers to

1 / 1 point

☒ How well the sampling covers the entire distribution space

☐ The similarity of the sample values

☒ **Correct**

9. Rhat, used to measure mixing measures

1 / 1 point

☐ the variance between the chains

☒ the ratio of the variance between the chains to the variance within the chains

☒ **Correct**

10. Rhat values below 1.1 indicate convergence while those above do not

1 / 1 point

☒ True

☐ False

☒ **Correct**

11. Thinning or pruning refers to dropping every n'th sample to avoid correlated samples

1 / 1 point

☒ True

☐ False

☒ **Correct**

12. Divergences happen in regions of high curvature or sharp gradients in the sampling manifold

1 / 1 point

☒ True

☐ False

☒ **Correct**

