

✔ Congratulations! You passed!

Grade received 80%

Latest Submission Grade 80%

To pass 80% or higher

Go to next item

1. The ratio of the transition probabilities between states can be seen as the ratio of their probability densities **1 / 1 point**

☒ True

☐ False

✔ **Correct**
2. Not using a reasonable prior can result in convergence issues when performing MCMC sampling **1 / 1 point**

☒ True

☐ False

✔ **Correct**
3. Not using an appropriate proposal distribution during MCMC can result in inaccurate inferences about a parameter **1 / 1 point**

☒ True

☐ False

✔ **Correct**

4. The Metropolis-Hastings algorithm differs from the Metropolis algorithm in terms of the correction term that is added to the Metropolis step

0 / 1 point

☐ True

☒ False

☒ **Incorrect**

The correction term allows us to use non-symmetric proposal distributions.

5. The Metropolis algorithm is a specific case of the Metropolis-Hastings algorithm

1 / 1 point

☒ True

☐ False

☒ **Correct**

6. Why does a correction term exist in the Metropolis-Hastings algorithm?

1 / 1 point

☐ To remove the errors introduced by the Metropolis algorithm

☒ To correct for the lack of symmetry in a non-symmetric proposal distribution (C)

☒ **Correct**

7. We use non-symmetric proposal distributions because

1 / 1 point

☐ They are more fun to use!

☒ To avoid invalid draws

☒ **Correct**

Symmetric proposal distributions can exceed the reasonable expected bounds of a value, hence an asymmetric proposal distribution is useful.

8. In the Metropolis algorithm, what is used as the tuning parameter if a Normal distribution is used as a proposal distribution?

1 / 1 point

☒ Standard deviation

☐ Mean

☒ **Correct**

9. Bayesian Inference can be seen as a type of online learning since

1 / 1 point

☒ The inferred posterior can be used as the prior when new data arrives

☐ The prior can be reused again for new data

☒ **Correct**

10. If the traceplot displays a straight line, this is a sign that

0 / 1 point

☐ The newly proposed values are being rejected

☒ The sampling has converged

☒ **Incorrect**

The straight line implies that the same value is being reused. This is because all the new values are being rejected.