Questions for Lecture 4

While reading *Chapter 4.4–4.5* of [G], ask yourself:

- How does one derive the differential operator of the PDE corresponding to a given SDE?
- In the Feynman–Kac formulas, what do we assume and what do we get?
- What are the essential steps and basic ideas of the proof of Theorem 4.4.3?
- What happens and does it mean if the time horizon tends to infinity?
- What are the consequences for the PDEs and SDEs if we consider $\mathbb{R}^d$ or bounded domains? How do the different pictures correspond to each other?