Here are the questions from [6.2.2 The extended Kalman filter – Examples and remarks - Quiz]

1. Why is there a big difference between the true joint and our Gaussian approximation for this example compared to the previous example? Which aspects are important in general for our Gaussian approximation of the joint density to be good?

Optional Answers:

2. Which of the following statements is NOT true?

Optional Answers:

1. The ordinary Kalman filter can be used also for nonlinear models
   but it will perform worse than, e.g., the extended Kalman filter.
2. If we have a linear motion model and nonlinear measurement model, we can combine a Kalman filter prediction with the update step of the EKF.
3. For linear and Gaussian state space models, the EKF is equivalent to the Kalman filter.
4. We can use the EKF for all nonlinear state space models, but it will only be accurate for "mildly" nonlinear models.

Thank You