

MCSM
Assignment 9
Problem 7.45
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Gibbs sampler is based on conditional distributions derived from $f(x_1, \dots, x_q)$ or $g(y_1, \dots, y_p)$.

These conditional distributions may be well defined and may be simulated from, but may not correspond to any joint distribution g ; that is the function g is not integrable. The same problem may occur when using a proportionality relation ; that is, $\pi(\theta|x)$ is proportional to $\pi(\theta)f(x|\theta)$, to derive a Metropolis-Hastings algorithm for $\pi(\theta)f(x|\theta)$.

In the given problem, function g is not integrable. So Metropolis-Hastings algorithm cannot be used and hence Gibbs sampler cannot be implemented.