

Lab 2 (from Douglas N. VanDerwerken)

- Consider two priors for θ :

1. $\text{Gamma}(\text{shape} = 50, \text{scale} = .1)$

$$2. p(\theta) = \begin{cases} .07 & \text{if } \theta \in (3, 4] \\ .45 & \text{if } \theta \in (4, 5] \\ .39 & \text{if } \theta \in (5, 6] \\ .09 & \text{if } \theta \in (6, 7] \end{cases}$$

Plot both priors on the same plot. (I want to see this.)

- Now, suppose $y|\theta \sim \text{Pois}(\theta)$. Suppose further that you observe the following data ($n = 10$): $y = (2, 1, 9, 4, 3, 3, 7, 7, 5, 7)$.

Plot the two posteriors on the same plot (but a different plot from the first). (I want to see this.)

- What is the 95% central credible interval (i.e., using 2.5th and 97.5th percentiles) for posterior 1 (the posterior derived from prior 1)?

Describe in words how one would find the 95% central credible interval for posterior 2 (but you don't need to find it).