$\pi(\theta) \sim Beta(2,3) \propto \theta^{2}(1-\theta)^{2}$

$\pi(x|\theta) \sim Binomial(2,\theta) \propto \theta^{K}(1-\theta)^{2-K}$

$\pi(\theta|\underline{x}) = \theta^{K+2-1}(1-\theta)^{5-K-1} \sim Beta(2+K, 5-K)$

Si $K=1 \sim Beta(3,4)$