

$$p(\alpha, \beta | \underline{X}) \propto \left(\frac{\Gamma(\alpha + \beta)}{\Gamma(\alpha)\Gamma(\beta)} \right)^{10} \left[\prod_{j=1}^{10} \frac{\Gamma(x_j + \alpha) \Gamma(n_j - x_j + \beta)}{\Gamma(\alpha + \beta + n_j)} \right] \alpha^{c-1} \exp(-\alpha d) \beta^{e-1} \exp(-\beta f)$$