$$\text{Gamma}(x \mid \text{shape} = \alpha, \text{rate} = \beta) = \frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}$$

$$\text{Inv-Gamma}(x \mid \text{shape} = \alpha, \text{rate} = \beta) = \frac{1}{\beta^\alpha \Gamma(\alpha)} x^{-(\alpha+1)} e^{-1/\beta x}$$