$$x \left\{ \left(\frac{\alpha}{2} \right) \Big/ \Gamma(p-[p]+1) \right\} \times k$$

$= h(x)$ pdf of $G\left(\frac{\alpha}{2}, p-[p]+1\right)$

$G\left(\frac{\alpha}{2}, p-[p]+1\right)$ distn. has mode at $x_0 = \frac{2(p-[p])}{\alpha}$

$\therefore c = h(x_0) \cdot k$

$\hookrightarrow$ pdf of $G\left(\frac{\alpha}{2}, p-[p]+1\right)$

5 - $f(x) = \text{Beta}(a,b)$

$$U = \frac{\sum_{i=1}^{a} \log v_i}{\sum_{i=1}^{a+b} \log v_i} \sim \text{Beta}(a,b), \quad v_i \overset{iid}{\sim} U(0,1)$$

where a and b are integers.

~~Take g(x)~~ For a and b non-integers,

Take $g(x) = \text{Beta}([a],[b])$

H.W. $p<1$ @ for Gamma

$a<1$, $b<1$ for Beta