PT Closed Form $r(\delta, \varepsilon)$ & $m(\delta)$

$$\delta = 1 - \frac{m-1}{m}$$

$$1-\delta = \frac{m-1}{m} = 1 - \frac{1}{m}$$

$$\delta = \frac{1}{m} \Rightarrow m = \frac{1}{\delta}$$

$$\varepsilon = \frac{r}{M(m-1)}\left(\frac{m-1}{m}\right)^{m-1}$$

$$= \frac{r}{M\left(\frac{1}{\delta}-1\right)}\left(\frac{\frac{1-\delta}{\delta}}{\frac{1}{\delta}}\right)^{\frac{1-\delta}{\delta}}$$

$$= \frac{r}{M\left(\frac{1-\delta}{\delta}\right)}\left(1-\delta\right)^{\frac{1-\delta}{\delta}}$$

$$r = \varepsilon M\left(\frac{1-\delta}{\delta}\right)\left(1-\delta\right)^{-\left(\frac{1-\delta}{\delta}\right)}$$