Ecce
$$x^{x+1} = (x+1)^x \Big|_{x>0}$$

 $h(z) = z^{-z} - z - 1$
 $z_{i+1} = z_i - \frac{h(z_i)}{\frac{dh}{dz}|_{z=z_i}} \Big|_{z_0=0.5}$
 $x = \frac{1}{z_n}$