

Let $f(x) = \frac{xe^{-ax}}{1-e^{-bx}}$

With a & b in $(0, \infty)$

Show that f is integrable on $[0, \infty)$

& $\int_0^{\infty} f(x) dx = \sum_{n=1}^{\infty} \frac{1}{(a+nb)^2}$