Problems from Assignment 3

1. Suppose $\lambda > 0$ and consider the function:

$$f_X(x) = \begin{cases} \lambda^2 x e^{-\lambda x} & x \geq 0 \\ 0 & x < 0. \end{cases}$$

Show:

(a) $f_X(x)$ is a continious pdf.

(b) if X has a pdf of $f_X(x)$ then find $E(X)$.