

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