

Problems from Assignment 3

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

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

Show:

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